Title

Concordance between self-reported STI history and biomedical results among men who have sex with men in Los Angeles, California

Journal

Sexually Transmitted Infections, 93(7)

ISSN

1368-4973

Authors

Cunningham, Nicole J

Beymer, Matthew R

Javanbakht, Marjan

et al.

Publication Date

2017-11-01

DOI

10.1136/sextrans-2016-052933

Peer reviewed

HHS Public Access

Author manuscript

Sex Transm Infect. Author manuscript; available in PMC 2018 November 01.

Published in final edited form as:

Sex Transm Infect. 2017 November ; 93(7): 514–519. doi:10.1136/sextrans-2016-052933.

Concordance between Self-Reported Sexually Transmitted Infection History and Biomedical Results among Men who Have Sex with Men in Los Angeles, California

Nicole J Cunningham,
Department of Health and Mental Health Services, Los Angeles LGBT Center, Los Angeles, USA

Department of Epidemiology, Fielding School of Public Health, University of California, Los Angeles, Los Angeles, USA

Matthew R Beymer,
Department of Health and Mental Health Services, Los Angeles LGBT Center, Los Angeles, USA

Division of Infectious Diseases, Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, USA

Marjan Javanbakht,
Department of Epidemiology, Fielding School of Public Health, University of California, Los Angeles, Los Angeles, USA

Chelsea L Shover, and
Department of Health and Mental Health Services, Los Angeles LGBT Center, Los Angeles, USA

Department of Epidemiology, Fielding School of Public Health, University of California, Los Angeles, Los Angeles, USA

Robert K Bolan
Department of Health and Mental Health Services, Los Angeles LGBT Center, Los Angeles, USA

Abstract

Objectives—HIV studies and risk assessments among men who have sex with men (MSM) frequently utilize self-reported STI history as a proxy for true STI history. The objective of our study was to assess the validity of self-reported STI history through comparison with laboratory-confirmed STI history.

Methods—Data were analyzed for MSM attending the Los Angeles LGBT Center (the Center) from August 2011 to July 2015. We identified 10,529 unique MSM who received testing for

Corresponding Author: Name: Nicole J Cunningham, Mailing Address: Los Angeles LGBT Center, McDonald/Wright Building, 1625 N. Schrader Blvd., Room 205, Los Angeles, CA 90028-6213, USA, Phone Number: (608) 334-4945, nj.cunningham@outlook.com.

Competing interests None.

Contributor statement NJC: analysis and interpretation of data, drafting and critically revising manuscript, final approval. MRB: conception, design, interpretation of data, and critically revising manuscript. MJ: critically revising manuscript. CLS: interpretation of data and revising manuscript. RKB: revising manuscript.

Provenance and peer review Not commissioned; externally peer reviewed.

chlamydia, gonorrhea, and/or syphilis and had a later visit in which they self-reported their STI history to a clinic counselor during a risk assessment.

Results—MSM who had an STI in the past year self-reported their history with 51 – 56% accuracy, and MSM who had an STI more than a year ago self-reported their history with 65 – 72% accuracy. Among MSM with any positive STI history at the Center, Black/African-American and Hispanic MSM were more likely to inaccurately self-report their history of gonorrhea (aOR: 1.48, 95% CI: 1.09, 2.01; aOR: 1.39, 95% CI: 1.14, 1.70). Additionally, HIV-positive MSM were more likely to inaccurately self-report their positive history of gonorrhea (aOR: 1.63, 95% CI: 1.22, 2.18) and/or syphilis (aOR: 2.19, 95% CI: 1.08, 4.47).

Conclusions—This is the first study which attempts to evaluate the validity of self-reported STI history among MSM. We found that self-reported STI history may not be an appropriate proxy for true STI history in certain settings and minority populations. Clinical guidelines and research studies that rely on self-reported STI history will need to modify their recommendations in light of the limited validity of these data.

INTRODUCTION

Gay, bisexual, and other men who have sex with men (MSM) comprised two-thirds of newly-diagnosed HIV infections in 2014, despite making up only 2% of the U.S. population.[1] MSM also experience a higher prevalence of sexually transmitted infections (STIs) than the general U.S. population. In 2014, the CDC pooled a sample of over 18,000 MSM attending 26 STI clinics, and estimated that the median site-specific prevalence of gonorrhea and chlamydia were 19.2% and 14.9%, respectively.[2] MSM also account for more cases of primary and secondary syphilis than men who have sex with women (MSW) and women across all racial/ethnic groups.[2]

Since the 1990s, numerous studies have demonstrated that chlamydia and gonorrhea considerably increase both sexual HIV acquisition through increased biological susceptibility[3–5] and HIV transmission through increased viral shedding.[6] Similar relationships have been found for syphilis.[7–8] In light of the strong biological link between STIs and HIV acquisition/transmission and high prevalence of STIs among MSM, it is increasingly important to accurately measure, monitor, and reduce the burden of STIs among this population.[1–2]

In HIV studies and risk assessments, STI history is collected from patients because it is a proxy for HIV risk, due to both biological factors as well as behavioral risk factors such as condom use and number of sexual partners. STI history is most often collected through self-report because it is quick and cost-effective. However, the validity and completeness of self-reported data among MSM has been unclear in research.[9–10]

To the best of our knowledge, the validity of self-reported STI history as a proxy for actual STI history has been understudied among MSM, but has been studied in other populations at high risk for HIV, including African-American adolescents,[11–12] and injection drug users.[13] In a study of 479 adolescent African-American females, Harrington et al evaluated the accuracy of self-reported STI test results over a period of 28 days.[11] Participants with

negative test results self-reported with nearly 100% accuracy; participants with positive test results self-reported with considerably less accuracy depending on the STI in question, ranging from 56.5% accurate (gonorrhea) to 74.6% accurate (trichomoniasis). Among a sample of 126 African-American adolescents, Clark et al compared self-reported STI-related medical visits to actual visits over the past 6 – 12 months.[12] Approximately 40% of the patients reported having zero medical visits for STIs even though chart review revealed at least one STI-related visit during the follow-up period. Kleyn et al assessed the agreement between 62 injection drug users' self-reported history and biomedical tests for Hepatitis B, HSV-1, HSV-2, and syphilis. They observed a wide range of positive tests among those who reported a negative history (3.5 – 61.3%), indicating questionable validity of self-reported history among this population.[13]

In light of the relationship between STIs and HIV, establishing the accuracy of self-reported STI history is critical for assessing risk of HIV acquisition and transmission among MSM, as well as identifying circumstances to provide recommended preventative services, such as pre-exposure prophylaxis (PrEP). The primary aim of our study is to explore the validity of self-reported STI history by MSM clinic patients compared to their laboratory-confirmed STI history. Specifically, we will assess the concordance of individuals' most recent self-reported history of chlamydia, gonorrhea, and syphilis with their actual medical history of these infections.

MATERIALS AND METHODS

Data collection

The Los Angeles LGBT Center ("the Center") specializes in caring for lesbian, gay, bisexual, and transgender people, acknowledging the unique health needs of these populations. The Center provides a variety of health and social services, including primary care, transgender care, HIV care, HIV/STI testing, HIV prevention, mental health services, addiction recovery services, and nutrition services. Data for this study were collected from the Sexual Health Program at the Center from August 2011 to July 2015.

MSM receiving STI testing services for chlamydia, gonorrhea, and syphilis at the Center were included in our study population if they were 18 years of age or older, had at least one STI testing visit, and had a subsequent visit during which self-reported STI history was collected. MSM were defined as follows: 1) assigned male sex at birth, 2) had a gender identity of male, and 3) identified as gay or bisexual, or reported having sex with another male in the past year.

For each unique client, we identified his most recent visit to the clinic. At this visit, each client completed a health risk assessment in a face-to-face (FTF) interview with a STI/HIV counselor. During this risk assessment, the client self-reported his history of chlamydia, gonorrhea, and syphilis. For each STI, the client had the option to report his history as "past year", "ever" (more than a year ago), or "never".

Our outcome of interest was discordance between a client's self-reported STI history and his true STI history. We assessed the discordance of an individual's self-reported history for

each STI through comparison with his medical history of STI testing results/diagnoses at the Center. Positive laboratory test results for chlamydia and gonorrhea (at any site) were used to indicate a positive history of chlamydia and gonorrhea. A positive laboratory result and confirmed diagnosis were used to indicate a positive history of syphilis. Self-reported "past year" history was considered concordant if the client had a positive STI result 0 – 366 days prior to the most recent visit. Self-reported "ever" history was considered concordant if the individual only had a positive STI result more than 366 days prior to the most recent visit. Self-reported "never" history was considered concordant if the individual had a history of only negative STI testing results at the Center. If the client's self-reported STI history and actual STI history did not match, then the response was considered discordant.

We also abstracted information on the following covariates: age group, race/ethnicity, education level, HIV status, country of birth, substance use in the past year, presence of symptoms (on day of most recent positive test), and days since most recent positive test. We created a dichotomous composite variable for self-reported substance use in the past year. Substance use in the past year included any reported use of methamphetamine, ecstasy, cocaine, crack, heroin, or gamma-Hydroxybutyric acid (GHB) to a clinic counselor. Clients were categorized as HIV-positive if they had an established HIV infection or had a first positive HIV test more than ten days prior to their self-report visit. We also created three dichotomous composite variables for self-reported symptoms among those with a positive testing history of chlamydia, gonorrhea, and/or syphilis. Clients who reported any of the following urethral symptoms were considered symptomatic during STI testing: discharge, burning, itching, bleeding, pain, lesions, rash, and/or swelling. Clients who reported that they had none of the previous symptoms were considered asymptomatic at testing.

Statistical methods

We used chi-square tests to determine if there was a difference in the level of concordance between MSM with a positive STI history and MSM with a negative STI history. We limited the remainder of our analysis to MSM with a positive history of chlamydia, gonorrhea, and/or syphilis. We developed three multivariable logistic regression models (one for each STI) in order to identify significant predictors of discordant self-reported STI history. We controlled for the following covariates in all three models: age group, race/ethnicity, education level, HIV status, country of birth, substance use in the past year, presence of symptoms (on day of most recent positive test), and days since most recent positive test.

We utilized a complete-case analysis approach for missing data. An alpha level of 0.05 was used for all statistical analyses. All analyses were performed using SAS version 9.4 (Cary, North Carolina, USA).

RESULTS

Demographics and risk factors

A total of 10,529 unique MSM met the inclusion criteria during the study period (Table 1). Almost half (49%) were white, one-half (51%) had a college degree or higher, and a majority (80%) were born in the United States. Less than one-fifth (17%) of the men

reported substance use in the year prior to their most recent visit, and 5% were HIV-positive. Among our study population, 2,275 MSM (22%) had at least one positive test result for chlamydia, 2,669 MSM (25%) had at least one positive test result for gonorrhea, and 289 MSM (3%) had at least one laboratory-confirmed diagnosis of syphilis (early latent, late latent, primary, or secondary).

Bivariate analyses

Of the MSM who tested positive for an STI in the year prior to their most recent visit, 51% (n = 574) concordantly self-reported "past year" for chlamydia, 56% (n = 744) for gonorrhea, and 56% (n = 70) for syphilis (Table 2). Of the MSM who tested positive for a STI more than a year prior to their most recent visit, 65% (n = 741) concordantly self-reported "ever" for chlamydia, 69% (n = 919) for gonorrhea, and 72% (n = 118) for syphilis. Of the MSM with only negative test results at the Center, 74% (n = 6,093) concordantly self-reported "never" for chlamydia, 68% (n = 5,356) for gonorrhea, and 88% (n = 8,981) for syphilis. Collapsing across affirmative categories of self-report ("ever" or "past year"), 81% of our study population correctly reported their positive history of chlamydia, 86% for gonorrhea, and 90% for syphilis.

Multivariable logistic regression

In a multivariable analysis among MSM with any positive history of chlamydia at the Center, the only variable which exhibited a significant association ($p < 0.0001$) with the outcome of interest was days since last positive chlamydia test (data not shown). Otherwise, there were no significant differences in discordant self-reported history of chlamydia across categories of age group ($p = 0.42$), race/ethnicity ($p = 0.81$), education level ($p = 0.23$), HIV status ($p = 0.14$), country of birth ($p = 0.93$), substance use ($p = 0.56$), or symptoms ($p = 0.72$).

In a multivariable analysis among MSM with a positive history of gonorrhea at the Center, race/ethnicity ($p = 0.0004$), HIV status ($p = 0.001$), and days since last positive gonorrhea test ($p < 0.0001$) were significantly associated with discordant self-reported history of gonorrhea (Table 3). Among this subset of the study population with any positive history of gonorrhea, Black/African-American (aOR: 1.48; 95% CI: 1.09, 2.01) and Hispanic MSM (aOR: 1.39; 95% CI: 1.14, 1.70) were more likely to inaccurately self-report their positive testing history of gonorrhea than White MSM. HIV-positive MSM were also more likely (aOR: 1.63; 95% CI: 1.22, 2.18) to inaccurately self-report their positive testing history of gonorrhea than HIV-negative MSM.

In a multivariable analysis among MSM with a positive history of syphilis (newly-diagnosed with syphilis) at the Center, HIV status ($p = 0.03$) and days since last positive syphilis test ($p < 0.0001$) were significantly associated with discordant self-reported history of syphilis (Table 4). HIV-positive clients were more likely (aOR: 2.19; 95% CI: 1.08, 4.47) to inaccurately self-report their positive history of syphilis than HIV-negative clients. Although race/ethnicity was not significant overall for this analysis ($p = 0.08$), Hispanic (aOR: 2.18; 95% CI: 1.03, 4.60) and Black/African-American (aOR: 2.19; 95% CI: 0.84, 5.70) MSM were more likely to inaccurately self-report their positive history of syphilis.

DISCUSSION

Our study sought to evaluate the validity of self-reported STI history among a clinical population of MSM, a group with significant STI and HIV morbidity. We found that MSM self-reported with 51 – 56% accuracy for STIs occurring in the past year and 65 – 72% accuracy for STIs occurring more than a year ago. As shown in Table 2, the proportions of MSM who completely omitted their positive STI history ("never" reporters) were very similar across the two time frames, suggesting that complete omission of positive STI history is independent of when the STI actually occurred.

Across both time frames, MSM with a positive history of syphilis were able to self-report their syphilis history with greater accuracy than MSM with positive histories of either chlamydia or gonorrhea. This heightened accuracy may reflect increased awareness of syphilis diagnoses, given the strong patient outreach and public health campaigns which focus on syphilis. It may also suggest greater understanding of syphilis diagnosis due to the prolonged presence of treponemal antibodies in the blood, since these antibodies may continue to yield positive serological test results long after the initial infection has been treated.[14]

Among MSM with a positive STI test either in the past year or more than a year ago, the proportion of MSM who reported that they never had an STI was highest among those with a positive history of chlamydia and lowest among those with a positive history of syphilis. Of the three STIs included in this study, chlamydia is least likely to yield painful symptoms in men, perhaps making it the easiest to dismiss or remember accurately due to the lack of symptoms.[15] From our multivariable logistic regression model, inaccurate recall of chlamydia was non-differential across all covariates except days since last positive test. This broad lack of memorability may reflect both the asymptomatic nature of the infection as well as public health priorities around STIs, which tend to be higher for syphilis and gonorrhea than chlamydia.

Our study found that Black/African-American and Hispanic MSM were more likely to inaccurately self-report positive gonorrhea history than White MSM. The reasons for this disparity are unclear. The proportions of rectal, urethral, and pharyngeal infection were comparable between racial/ethnic groups, and the proportion of symptomatic individuals was highest among Black/African-American MSM. Previous studies have found similar patterns of underreporting of risk factors by race/ethnicity among MSM.[9–10] Additionally, our self-reported data were collected in face-to-face interviews, likely yielding some degree of social desirability bias.[16]

Our study has several important limitations. Individuals who self-reported a positive STI history ("past year" or "ever") that did not reflect their STI testing history at the Center may have received testing services or been diagnosed at other clinics. Since we only have access to medical records for visits at the Center, we cannot confirm these diagnoses, and these individuals appear to self-report discordantly in our analysis. However, given the culturally-competent care and free testing/treatment that are offered by the Center, many of the MSM in our population likely receive their STI testing services exclusively at the Center.

Additionally, our study population may be less reluctant to report positive STI history compared to a population of MSM receiving care at other clinics, because of the culturally-competent environment at the Center. The findings from our study may be optimistic compared to other high-risk populations, and may also not be generalizable to all MSM given the location and speciality of the Center.

Despite these limitations, our study also exhibits major strengths. The study population was large, lending greater statistical power than was generated by previous studies and allowing us to examine individual STIs. Additionally, the validity of self-reported STI history and the factors which may influence its level of accuracy have been understudied among MSM, despite the high burden of STIs and HIV faced by this population.

Implications

The findings from our study have implications for the continued use of self-reported STI history as a proxy for actual STI history. Concordance between self-reported STI history and true STI history can be quite low, especially when the patient is asked to recall how long ago the STI occurred. The CDC recommends that STI/HIV prevention counseling should be offered to all patients who have had an STI in the past year.[17] By relying on self-reported STI history alone, our results suggest that nearly half of MSM who have had an STI in the past year are being misclassified, and subsequently may not be offered the recommended preventative counseling services.

The CDC also recommends that PrEP should be considered for HIV-uninfected MSM who are not in a mutually-monogamous sexual relationship with an HIV-negative partner, and have been diagnosed with an STI in the past six months or have had anal sex without a condom.[18] Among our study population, 34 – 39% of MSM who were diagnosed with a STI in the past six months inaccurately reported that they had a STI more than a year ago or reported that they were never diagnosed with a STI. Based on the six-month screening criterion, these individuals would not be offered PrEP. In these types of clinical settings, it may be advisable to verify self-reported STI history with medical record review, or to electronically flag MSM (in clinics utilizing electronic medical records) who have recently tested positive for a STI so that these individuals are appropriately offered the recommended counseling or referred to HIV prevention services.

In settings where the time frame is less critical or not collected (i.e. reporting an ever vs. never STI history), using self-reported STI history as a proxy for true STI history may be more valid. A previous study similarly found better concordance between self-reported and true STI history when diagnosis date was removed from the analysis.[19]

We found significantly lower rates of accurately self-reported STI history among Black/African-American and Hispanic MSM. This finding is especially concerning, given that both of these minority groups are at higher risk for HIV acquisition compared to White MSM.[20–21] Where possible, self-reported risk factors and sensitive sexual behaviors should be collected via audio computer-assisted self-interview (ACASI) methods rather than in face-to-face interviews in order to minimize underreporting among these high-risk populations. Previous studies have noted significant underreporting of sexual risk behaviors in FTF

versus ACASI, even among STD clinical populations.[16] In situations where ACASI is not feasible, we recommend that questions regarding STI history include an “unsure” option, which would minimize misclassification by identifying MSM who may need their STI history verified by other methods. Since August 2015, the risk assessments at the Center have incorporated such options.

Given its limited validity, the continued use of self-reported STIs as a proxy for true STI history may be insufficient in some clinical and research settings. In such situations, we advise using alternative data collection/validation methods in order to capture an appropriate estimate of true STI history.

Acknowledgments

We would like to thank the counseling staff at the Center for collecting the data used for this study, and for their dedication towards improving the health of the LGBT community in Los Angeles.

Study approval This study was approved by the University of California, Los Angeles Medical Institutional Review Board 1 (Project No. 16-001454).

Funding statement MRB was supported by the UCLA Postdoctoral Fellowship Training Program in Global HIV Prevention Research (Currier and Gorbach, PIs); T32MH080634.

References

1. Centers for Disease Control and Prevention (CDC). HIV Surveillance Report, 2014. Atlanta, GA: US Department of Health and Human Services; 2015. p. 26
2. Centers for Disease Control and Prevention (CDC). Sexually Transmitted Disease Surveillance 2014. Atlanta, GA: US Department of Health and Human Services; 2015. Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect. 1999; 75:3–17. [PubMed: 10448335]
3. Craib KJ, Meddings DR, Strathdee SA, et al. Rectal gonorrhea as an independent risk factor for HIV-infection in a cohort of homosexual men. Genitourin Med. 1995; 71:150–4. [PubMed: 7635489]
4. Pathela P, Braunstein SL, Blank S, et al. HIV incidence among men with and those without sexually transmitted rectal infections: estimates from matching against an HIV case registry. Clin Infect Dis. 2013; 57:1203–9. [PubMed: 23800942]
5. Zetola NM, Bernstein KT, Wong E, et al. Exploring the relationship between sexually transmitted diseases and HIV acquisition by using different study designs. J AIDS. 2009; 50:546–51.
6. Cohen MS, Hoffman IF, Royce RA, et al. Reduction of concentration of HIV-1 in semen after treatment of urethritis: implications for prevention of sexual transmission of HIV-1. Lancet. 1997; 349:1868–73. [PubMed: 9217758]
7. Buchacz K, Patel P, Taylor M, et al. Syphilis increases HIV viral load and decreases CD4 cell counts in HIV-infected patients with new syphilis infections. AIDS. 2004; 18:2075–9. [PubMed: 15577629]
8. Telzak EE, Chiasson MA, Bevier PJ, et al. HIV-1 seroconversion in patients with and without genital ulcer disease - a prospective-study. Ann Intern Med. 1993; 119:1181–6. [PubMed: 8239249] Nagarajan K, Godbole S, Ramakrishnan L, et al. Self-report of STI symptoms, inconsistent condom use and condom non-use are poor predictors of STI prevalence among men who have sex with men. J AIDS Clin Res. 2013; 4:212.
9. White D, Rosenberg ES, Cooper H, et al. Racial differences in the validity of self-reported drug use among men who have sex with men in Atlanta, GA. Drug Alcohol Depen. 2014; 138:146–53.

10. Wu H, Hightow-Weidman LB, Gay CL, et al. Unreported male sex partners among men with newly diagnosed HIV infection – North Carolina, 2011–2013. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report. 2015; 64:1037–41.
11. Harrington KF, DiClemente RJ, Wingood GM, et al. Validity of self-reported sexually transmitted diseases among African American female adolescents participating in an HIV/STD prevention intervention trial. Sex Transm Dis. 2001; 28:468–71. [PubMed: 11473220]
12. Clark LR, Brasseux C, Richmond D, et al. Are adolescents accurate in self-report of frequencies of sexually transmitted diseases and pregnancies? J Adolescent Health. 1997; 21:91–6.
13. Kleyn J, Schwebke J, Holmes KK. The validity of injecting drug-users self-reports about sexually-transmitted diseases: a comparison of survey and serological data. Addiction. 1993; 88:673–80. [PubMed: 8518718]
14. Centers for Disease Control and Prevention (CDC). Syphilis – CDC Fact Sheet (Detailed). http://www.cdc.gov/std/syphilis/stdfact-syphilis-detailed.htm (accessed June 2016)
15. Peterman TA, Tian LH, Metcalf CA, et al. High incidence of new sexually transmitted infections in the year following a sexually transmitted infection: a case for rescreening. Ann Intern Med. 2006; 145:564–72. [PubMed: 17043338]
16. Ghanem KG, Hutton HE, Zenilman JM, et al. Audio computer assisted self interview and face to face interview modes in assessing response bias among STD clinic patients. Sex Transm Infect. 2005; 81:421–5. [PubMed: 16199744]
17. Centers for Disease Control and Prevention (CDC). Clinical Prevention Guidance. 2015 Sexually Transmitted Disease Treatment Guidelines. http://www.cdc.gov/std/tg2015/clinical.htm (accessed June 2016)
18. Centers for Disease Control and Prevention (CDC). Preexposure prophylaxis for the prevention of HIV infection in the United States – 2014 clinical practice guideline. Atlanta, GA: U.S. Department of Health and Human Services; 2014.
19. Niccolai LM, Kershaw TS, Lewis JB, et al. Data collection for sexually transmitted disease diagnoses: a comparison of self-report, medical record reviews, and state health department reports. Ann Epidemiol. 2005; 15:236–42. [PubMed: 15723771]
20. Celentano DD, Sifakis F, Hylton J, et al. Race/ethnic differences in HIV prevalence and risks among adolescent and young adult men who have sex with men. J Urban Health. 2005; 82:610–21. [PubMed: 16221919]
21. Prejean J, Song RG, Hernandez A, et al. Estimated HIV incidence in the United States, 2006–2009. PLoS One. 2011; 6:e17502. [PubMed: 21826193]

KEY MESSAGES

- Despite its frequency of use, self-reported STI history may be a poor proxy for true STI history in certain clinical and research settings
- Black/African-American and Hispanic MSM with a positive history of gonorrhea are more likely to misreport their positive STI history than White MSM
- HIV-positive MSM with a positive history of gonorrhea/syphilis are more likely to misreport their positive STI history than HIV-negative MSM

Table 1

Demographics and Risk Factors of Men who Have Sex with Men (MSM) who had Sexually Transmitted Infection (STI) Testing and Subsequently Reported STI History at the Los Angeles LGBT Center, August 2011 – July 2015 (N = 10,529).

Demographic Category	N	%
Age Group		
< 25	1,567	15%
25–29	2,717	26%
30–39	3,527	33%
40+	2,718	26%
Race/Ethnicity[1]		
White	5,180	49%
Hispanic	3,125	30%
Black/African-American	833	8%
Other	1,382	13%
Partner Type		
MSM	9,149	87%
MSMW	1,380	13%
Education Level[1]		
High School or Below	1,337	13%
Some College	2,663	25%
College Degree or Above	5,421	51%
HIV Status		
HIV(−)	9,958	95%
HIV(+)[2]	571	5%
Place of Birth[1]		
United States	8,414	80%
Other	1,366	13%
Substance Use[1,3]		
No	8,672	82%
Yes	1,840	17%
History of Chlamydia Diagnosis		
Negative	8,254	78%
Positive	2,275	22%
History of Gonorrhea Diagnosis		
Negative	7,860	75%
Positive	2,669	25%
History of Syphilis Diagnosis		
Negative	10,240	97%
Positive	289	3%
Total	10,529	100%

[1]Total for category does not add to table total due to missing data.

[2]Individuals were classified as HIV(+) if they had an established HIV infection or had a positive HIV test 10 days or more prior to their most recent clinic visit.

[3]Includes any self-reported use of methamphetamine, ecstasy, cocaine, crack, heroin, or GHB in the past year.

Table 2

Concordance of Self-Reported STI History and Positive STI Testing History at the Los Angeles LGBT Center, August 2011 – July 2015.

Chlamydia(+) History			
Self-Reported	**0 - 366 Days Ago**	**> 366 Days Ago**	**Negative Only[1]**
Past Year	574 (51%)	188 (16%)	354 (4%)
Ever	346 (31%)	741 (65%)	1,807 (22%)
Never	210 (19%)	216 (19%)	6,093 (74%)
Total	1,130	1,145	8,254

Gonorrhea(+) History			
Self-Reported	**0 - 366 Days Ago**	**> 366 Days Ago**	**Negative Only[1]**
Past Year	744 (56%)	218 (16%)	438 (6%)
Ever	411 (31%)	919 (69%)	2,066 (26%)
Never	176 (13%)	201 (15%)	5,356 (68%)
Total	1,331	1,338	7,860

Syphilis(+) History			
Self-Reported	**0 - 366 Days Ago**	**> 366 Days Ago**	**Negative Only[1,2]**
Past Year	70 (56%)	27 (16%)	314 (3%)
Ever	44 (35%)	118 (72%)	945 (9%)
Never	11 (9%)	19 (12%)	8,981 (88%)
Total	125	164	10,240

[1] Individuals who reported a discordant positive STI history may have received STI/STD testing services outside the Center.

[2] The Center offers free treatment for all STIs. Individuals who are diagnosed with syphilis at health facilities outside the Center are often referred to the Center for syphilis treatment.

Table 3

Predictors of Discordant Self-Reported Gonorrhea History Among MSM with a Positive Gonorrhea History, LA LGBT Center, August 2011 – July 2015 (n = 2,669).

Risk Factor	Estimate	SE	p−value	aOR (95% CI)
Age Group (REF = < 25)				*p = 0.34*
25–29	0.16	0.13	0.22	1.17 (0.91, 1.52)
30–39	0.05	0.13	0.68	1.06 (0.82, 1.36)
40+	−0.06	0.15	0.69	0.94 (0.70, 1.27)
Education Level (REF = High school or below)				*p = 0.09*
Some college	−0.01	0.14	0.96	0.99 (0.75, 1.31)
College degree or higher	0.20	0.14	0.15	1.22 (0.93, 1.59)
HIV Status (REF = HIV−)				
HIV+	0.49	0.15	0.001	1.63 (1.22, 2.18)
Race/Ethnicity (REF = White)				*p = 0.0004*
Black/African-American	0.39	0.16	0.01	1.48 (1.09, 2.01)
Hispanic	0.33	0.10	0.001	1.39 (1.14, 1.70)
Other	−0.12	0.14	0.40	0.89 (0.67, 1.18)
Place of Birth (REF = United States)				
Other	0.05	0.13	0.72	1.05 (0.81, 1.35)
Substance Use (REF = No)				
Yes[1]	0.10	0.10	0.34	1.11 (0.90, 1.36)
Symptoms Present (REF = Yes)				
No	−0.05	0.09	0.56	0.95 (0.80, 1.13)
Days Since Last Positive Gonorrhea Test (REF = 6 months or less)				*p < 0.0001*
6 months to 1 year	0.74	0.12	< 0.0001	2.09 (1.65, 2.65)
1 year to 18 months	0.17	0.13	0.20	1.19 (0.92, 1.53)
18 months to 2 years	−0.35	0.15	0.02	0.70 (0.52, 0.95)
2 years or more	−0.39	0.14	0.01	0.68 (0.51, 0.89)

[1] Includes any self-reported use of methamphetamine, ecstasy, cocaine, crack, heroin, or GHB.

Table 4

Predictors of Discordant Self-Reported Syphilis History Among MSM with a Positive Syphilis History, LA LGBT Center, August 2011 – July 2015 (n = 289).

Risk Factor	Estimate	SE	p−value	aOR (95% CI)
Age Group (REF = < 25)				*p = 0.75*
25–29	0.23	0.49	0.64	1.26 (0.48, 3.31)
30–39	0.16	0.49	0.74	1.17 (0.45, 3.06)
40+	−0.18	0.53	0.74	0.84 (0.30, 2.36)
Education Level (REF = High school or below)				*p = 0.11*
Some college	0.88	0.43	0.04	2.42 (1.04, 5.59)
College degree or higher	0.64	0.41	0.12	1.90 (0.85, 4.23)
HIV Status (REF = HIV−)				
HIV+	0.78	0.36	0.03	2.19 (1.08, 4.47)
Race/Ethnicity (REF = White)				*p = 0.08*
Black/African-American	0.78	0.49	0.11	2.19 (0.84, 5.70)
Hispanic	0.78	0.38	0.04	2.18 (1.03, 4.60)
Other	−0.11	0.49	0.82	0.89 (0.34, 2.36)
Place of Birth (REF = United States)				
Other	0.11	0.41	0.79	1.12 (0.50, 2.51)
Substance Use (REF = No)				
Yes[1]	0.32	0.35	0.37	1.37 (0.69, 2.74)
Symptoms Present (REF = Yes)				
No	0.27	0.29	0.36	1.31 (0.74, 2.30)
Days Since Last Positive Syphilis Test (REF = 6 months or less)				*p < 0.0001*
6 months to 1 year	0.55	0.41	0.19	1.73 (0.77, 3.90)
1 year to 18 months	0.43	0.45	0.34	1.53 (0.64, 3.67)
18 months to 2 years	−0.63	0.51	0.21	0.53 (0.20, 1.44)
2 years or more	−1.44	0.50	0.004	0.24 (0.09, 0.63)

[1] Includes any self-reported use of methamphetamine, ecstasy, cocaine, crack, heroin, or GHB.