“What’s Your Status?” Disclosure of HIV Status Among Men Who Have Sex With Men

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Abstract

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Disclosure of HIV status is an important factor in negotiating safer sex among MSM. This continues to be a public health concern. In order to make a fully informed decision about using a condom when having sex, both partners should be aware of the others' HIV status. This study aims to determine the factors associated with disclosure, and to gain a better understanding of who discloses. To examine disclosure, I used data from a community-based HIV/STI clinic in Seattle, Washington. I found that African American and Hispanic MSM were less likely to disclose than whites, those who engaged in risky behaviors were less likely to disclose than those who do not, and that those with a high school education were less likely to disclose than those with at least a college degree. Lastly, I found there is not a significant difference in disclosure between HIV positive and HIV negative MSM.

INTRODUCTION

Since the earliest days of the epidemic, Human Immunodeficiency Virus (HIV) has disproportionately affected men who have sex with men (MSM) in the United States (US) (Prejean et al. 2011). Sexual behaviors such as unprotected anal intercourse (UAI), having multiple sex partners, and drug use all fueled the spread of HIV among gay men (Shilts 1998; Kalichman 1999; Halkitis et al. 2005). The eventual onset of AIDS prior to the availability of antiretroviral therapy (ART), led to the death of thousands of gay men and MSM nationwide (Shilts 1998). Now, living with HIV is a chronic condition and most living with the virus live long and healthy lives (Reynolds 2011). Despite improved treatment outcomes, HIV is associated with an increased healthcare cost not just at the individual level but also for insurance companies, and departments of public health (Freedberg, Losina, and Weinstein 2001).

Despite all of the information that exists on the risks associated with HIV, many MSM continue to engage in behaviors that put them at risk of acquiring HIV. While rates of new HIV infections increased in the late 1990s, the incidence rates have stabilized except in young, black MSM. In 2009 the incidence rate was 48,100 individuals. There was a 48% increase in incidence for young, black MSM (CDC 2010; 2010a; Prejean et al. 2011). It is problematic that rates are not decreasing for these groups and may lead to increasing racial/ethnic HIV disparities among MSM in the future (Prejean et al. 2011).

In order to understand the modern HIV epidemic among MSM, some researchers focus on HIV status disclosure among sex partners (see Simone and Pantalone 2004 for review). Disclosure plays an important part in the discourse surrounding HIV infection among MSM. Public health campaigns and official guidelines from government agencies

such as the Centers for Disease Control (CDC) all recommend that sex partners discuss their HIV status with sex partners (CDC 2010). Physicians and counselors are also encouraged to discuss disclosure with their newly infected patients. In fact, it is considered a crime in many states if a person withholds a positive status even if transmission does not occur (ACLU 2008; Hoppe 2013). However, research shows that disclosure is inconsistent at best, and that MSM still engage in behaviors that put them at risk of acquiring HIV (see Simoni and Pantalone 2004 for review).

Therefore, it is important to understand more about the factors associated with disclosure among MSM. Previous studies have primarily examined qualitative data drawn from a limited number of interviews with MSM to identify factors associated with disclosure (see Simoni and Pantalone 2004 for review). This study will utilize survey data from a community-based organization in Seattle, Washington, that serves MSM, to examine the correlates of HIV status disclosure among MSM. Informed by theories on stigma, community and identity, I use multivariate logistic regression analysis to examine the association between a series of demographic variables (age, race/ethnicity, education, income, sexual identity), risk factor variables (drug use, risky behaviors, condom use), sexual history variables (number of sex partners, HIV status) and disclosure to identify the factors most salient to disclosing among MSM. This study is unique because of its data collection methodology. Most studies use participant recruitment for both qualitative and quantitative analysis over a short period of time. This study uses intake chart questions from the community-based organization collected over eight years that a large portion of the city's MSM population utilize for HIV-testing and counseling.

BACKGROUND

National and State Policies for Disclosure

CDC guidelines state that HIV infected individuals have a responsibility to disclose their status to all sex partners (Jaffe 2003). In Washington State, the Department of Health guidelines that healthcare providers should "strongly encourage" HIV-infected individuals to disclose their status to all prior sex and needle-sharing partners, and that partners also get tested for HIV (Washington State Department of Health 2008). In Washington State a one-on-one follow up session is scheduled with a counselor or clinician after a positive test result. Unfortunately, as noted above, in some cases the importance of disclosure is not emphasized in discussions with HIV-positive patients, or patients do not feel comfortable discussing HIV with their doctors (Elford et al. 2000).

Many states have laws that punish HIV positive people who knowingly infect their sex partners without the partner being aware of their risk of exposure (ACLU 2008). Punishments can range from misdemeanors and fines to multiple years in prison. In Washington state it is a class A felony and a person is found guilty of assault in the first degree if he or she knowingly exposes or transmits HIV to another person ((Rev. Code Wash. § 9A.36.011(1)(b)).

HIV INFECTION AMONG GAY MEN AND MSM

Both locally and nationally, HIV disproportionately affects MSM, and rates have stabilized in the past decade, except among young, black MSM (Prejean et al. 2011). If disclosure is not taking place between MSM sex partners, identifying the characteristics of those who do or do not disclose will be important for informing interventions.

Nondisclosure is a risky behavior among MSM sex partners that could lead to transmission of HIV and other STIs. If disclosure does takes place between MSM sex partners, then it is important to understand why some men are continuing to engage in behaviors that place them at increased risk of HIV infection.

HIV Among MSM in the US and Washington State. As of 2009, the estimated Incidence of HIV in the United States was 29,300 individuals (Prejean et al. 2011). In addition, not all states report HIV incidence to the CDC and it is thought that about one fifth of those infected are unaware of their status. Thus, it is estimated there are about 1.1 million individuals are living with HIV in the United States (CDC 2010; 2010a). In Washington State MSM make up the vast majority of all new HIV cases and persons living with HIV (2011). Each year there are over 350 new MSM HIV cases reported statewide, and in 2009 alone MSM comprised 66% of all new HIV cases in the state. The number of MSM living with HIV increases about 4% per year, and there were over 7,300 MSM living with HIV in 2009 in the state. Though in Washington State most HIV-positive MSM are white, blacks and Hispanics also make up a significant number of cases. Data also suggests that it is not only younger MSM who are infected, but also middle age and older age adults. Between 2005 and 2009 almost 75% of cases were 30 years or older, while 36% were over the age of 40. Less than 2% of new cases in Washington are under the age of 20 (Washington State Department of Health 2011).

HIV Among MSM in King County and Seattle. HIV infection trends in Seattle and King County are similar to the statewide and nationwide epidemic. MSM account for about 80% of all people living with HIV in Seattle and King County. Similar to national and state statistics, racial/ethnic minority MSM have disproportionately high rates of HIV.

68% of HIV-positive MSM in King County are white, 17% are black, 9% are Hispanic, 3% are Asian and Pacific Islander, and 1% are Native Indian and Alaskan Native. Compared to their total population, African Americans and Hispanics are disproportionately affected.

Studies report differing numbers of MSM who engage in behaviors that put them in high risk of acquiring HIV. These behaviors include UAI with a serodiscordant sex partner, drinking alcohol and doing drugs, and having more than one sex partner in the past six months (Kalichman 1999; Halkitis et al. 2005). In a 2006 random digit dialing survey, 7% of HIV-negative MSM and 22% of HIV-positive MSM engaged in UAI (see Public Health-Seattle & King County 2009; 2009a for overview). In a 2008 Seattle-area National HIV Behavioral Surveillance survey, 31% of HIV-positive MSM ages 18-29 engaged in UAI with a partner of opposite or unknown HIV status (Public Health-Seattle & King County 2009; 2009a). The unsettling fact that HIV infection rates remain stagnant among MSM and are increasing for MSM of color, could suggest that interventions are not working, interventions are not reaching the right at-risk groups, or that there are new beliefs about the risks and consequences of being HIV-positive.

DISCLOSURE AMONG MSM

A number of studies on disclosure of HIV status among MSM have been conducted over the past three decades of the epidemic both in the United States and worldwide. There is an assumption among experts that generally, disclosure will lead to partners making an informed decision to engage in safe sex (Miller, Turner, and Moses 1990; Norman, Kennedy, and Parish 1998; Simoni and Pantalone 2004; CDC 2010;

2010a). Many of these studies come up with conflicting results surrounding the importance of disclosure (Simoni and Pantalone 2004). Thus, a debate continues over whether disclosure of HIV status among MSM is an important part of negotiating sex, and it is important to understand who is disclosing to target at risk populations for public health campaigns.

Barriers to disclosing among MSM. There are many barriers to disclosing or having a discussion about safe sex among sex partners. While some gay men believe it is the HIV-positive person's responsibility to disclose, some HIV-positive men believe it is the HIV-negative person's responsibility to bring up the discussion (Bayer 1996; Wolitski 1998; Davis 2002; Dodds, Keogh, and Weatherburn 2004; Barash and Chipps 2009; Fernández-Dávila et al. 2011). There are additional barriers to disclosure. Discrimination, fear of rejection, stigmatization, and exposure of other stigmatized identities and behaviors (such as being gay or a drug user) are all reasons that one may not disclose (Bayer 1996; Kalichman 1999; Kalichman and Nachimson 1999; Dodds et al. 2004).

Many studies also suggest that disclosure is less likely to take place when sex partners are anonymous, casual, or new, and the likelihood of disclosure increases the more partners' know about each other (Wolitski et al. 1998; Keogh et al. 1999; Davis 2002; Ciccarone et al. 2003). Some MSM suggest that they make assumptions about their sex partner's status when deciding to disclose or use a condom (Keogh, Weatherburn, and Stephens 1999; Davis 2002; Fernández-Dávila et al. 2011). As one man said, "if you are willing to have unsafe sex, it must mean that you don't feel like you have anything to protect….it seems so obvious" (Davis 2002:291). In numerous studies, MSM admit to

not bringing up a conversation as complex as disclosure or condom use because it essentially "ruins the moment" (Keogh et al. 1999; Davis 2002; Dodds et al. 2004).

Based on interviews with 22 gay men in Barcelona, Fernández-Dávila and colleagues (2011) found that condom use and disclosure were both rare among respondents. As one man said,

> either you use a condom or you don't. If you use one, why ask? And if you don't use it, why ask? If you use a condom, you don't need to ask. What you're doing is assuming everyone is HIV-positive from the outset, so it's up to you whether you use a condom or not" (2011:147).

Some MSM base their decision to disclose or use a condom on behaviors of their sex partner. Others choose not to disclose and perceive their risk based on physical characteristics and visual cues of their sex partner, suggesting, "he doesn't *look* HIV-positive" (Fernández-Dávila et al. 2011:144). In this way, some MSM avoid both having a discussion about disclosure and using a condom only based on the physical appearance and health of his sex partner (Fernández-Dávila et al. 2011).

Studies of Disclosure and Safe Sex. A handful of quantitative studies have sought to find a connection between disclosure and safe sex as well. Marks and Crepaz (2001) came up with four categories to characterize how MSM negotiate disclosure and safe sex behaviors. Some MSM knowingly place themselves at risk, despite being told their partner is HIV-positive. The authors call this (1) "informed exposure." Some men might engage in informed exposure due to a commitment to the relationship or because they are under the influence of drugs or alcohol. The authors also found that for some MSM, nondisclosure does not always necessitate unsafe sex. Some HIV-positive MSM will withhold their status but insist on protection, possibly to avoid rejection, or perhaps

because they feel a sense of responsibility to their partners. This scenario the authors termed (2) "uninformed protection." If sex partners disclose their statuses and engage in safer sex they are employing in (3) "informed protection." Lastly, if partners' HIV statuses are disclosed and they decided to forego safe sex, they engage in (4) "informed exposure". In one study, 40% of respondents engaged in "informed protection" while 35% of respondents engaged in "uninformed protection" (Marks and Crepaz 2001, Dodds et al. 2004; Simoni and Pantalone 2004). Based on this study, it becomes evident that safe sex (defined as using a condom) is not always necessitated by disclosure.

Other studies also fail to come to a consensus over the importance of disclosure in negotiating safer sex. In a study of HIV-positive men, Crepaz and Marks (2003) found about half of respondents disclosed their seropositive status to their most recent HIV-negative or HIV-unknown sex partner, and 65% discussed using a condom. However, 28% engaged in (UAI) or unprotected vaginal intercourse (UVI) with at-risk partners. The authors did not find a significant relationship between disclosure and safer sex (2003). In another study of HIV-positive men, 52% disclosed their seropositive status to HIV-negative or HIV-unknown partners and 25% engaged in UAI or UVI. 40% of these men engaged in informed protection, 35% engaged in uninformed protection, 12% engaged in informed exposure, and 13% engaged in uninformed exposure. Unsafe sex was equally prevalent among disclosers and non-disclosers (Marks and Crepaz 2001).

In two studies of HIV-positive men conducted at HIV outpatient clinics, researchers found that if respondents disclosed their status, safer sex was more likely to occur with HIV-negative partners, but not HIV-positive or HIV-unknown partners (Marks et al 1991; DeRosa and Marks 1998). Marks and colleagues (1994) found 86% of

HIV-positive anal sex partners, 46% of HIV-negative anal sex partners, and 18% of HIV-unknown anal sex partners were informed of the respondents' status. Only 9% engaged in UAI, and this was more likely with seroconcordant partners, than with HIV-negative or HIV-unknown partners. HIV-positive respondents engaged in UAI with 18% of HIV-negative partners who were informed (informed exposure), and 23% of HIV-negative partners who were not informed (uninformed exposure).

In a study conducted in four large U.S. cities, Wolitski and colleagues (1998) found HIV-positive MSM were more likely to disclose to their primary sex partner than with non-primary partners. Of the HIV-positive MSM, 16% reported UAI with uninformed casual sex partners, yet condom use and sex behaviors did not differ between HIV-positive disclosers and non-disclosers in the context of a primary partnership. Lastly, HIV-positive MSM were more likely to use protection with non-primary partners but only for insertive anal sex (Wolitski et al. 1998). In a study of MSM in Sydney, Australia only half of HIV-positive men disclosed their status at all, and 23% asked about their partner's serostatus. Additionally, 33% of HIV-positive men engaged in unprotective insertive anal intercourse, but not with any HIV-negative partners (Prestage et al. 2001).

Serosorting. Serosorting is a behavior that some MSM practice in which men choose or limit their unprotected sex partners to those of the same HIV status. Serosorting is also defined as when MSM report having same-status unprotected sex partners, regardless of the motivation to select a partner based on HIV status (Eaton et al. 2009). Serosorting holds different benefits and risks for HIV positive and HIV negative MSM. Serosorting allows HIV positive men to remain sexually active, avoid using condoms, minimize their risk of stigma, rejection, infecting their sex partners, and avoid

legal ramifications (Eaton et al. 2009; Remien and Mellens 2007; Galletly and Pinkerton 2006; O'Dell et al. 2008). However, there is still a risk of HIV positive men becoming superinfected with HIV and other STIs, especially absent full disclosure (Eaton et al. 2009). HIV negative men who serosort may actually be at a greater risk of becoming infected, despite intentions to protect themselves while being sexually active. The increased risk is partially due to the fact that disclosure of HIV status does not always occur, and HIV status is sometimes assumed. Furthermore, HIV testing may be infrequent. Also, current HIV tests do not catch acute infection, which is when risk of transmission is at its highest (Eaton et al. 2009). Multiple studies have found that among MSM who test positive, many of them serosorted, relied on HIV tests that were over a year old, were certain they were HIV negative, or had HIV negative partners, suggesting that MSM were not having a conversation about their HIV status (Golden et al. 2008; MacKellar et al. 2009, or see Eaton et al. 2009 for a review). Though this research seems to suggest that serosorting does not work for HIV negative MSM, it is still unknown if disclosure really matters for negotiating safe sex among MSM. In this study I aim to determine if MSM are disclosing their HIV status to their sex partners, and the characteristics of those who do or do not disclose. I examine six hypotheses exploring the connection between disclosure and age, race, education, income, and risk behaviors.

THEORETICAL FRAMEWORK

Stigma

HIV-positive individuals have experienced discrimination and stigmatization since the early days of the epidemic (Shilts 1998). Gay men were already a stigmatized

group of people, and faced discrimination for their sexual behaviors. Additionally, in the early days of the epidemic there was a fear that gay men would spread HIV to the rest of the population. Thus when groups of gay men started showing up at hospitals with rare infections and cancers, some hospitals would not admit them, and some nurses refused to help them as they suffered painful deaths (Shilts 1988). HIV-positive individuals and gay and bisexual men today are still stigmatized and face discrimination, despite an evolving perception of people living with HIV and the breadth of information available on HIV/AIDS. Many men do not disclose an HIV-positive status for fear of being stigmatized, rejected, or being associated with other stigmatized identities such as being a gay/bisexual man, or an injection drug user (Bayer 1996; Kalichman 1999; Kalichman and Nachimson 1999; Dodds et al. 2004). This fear of stigmatization and discrimination may be a major barrier to disclosing HIV status.

Parker and Aggleton (2003) suggest a new framework for understanding stigma, using both Goffman's work on stigma and Foucault's work on culture, power, and difference (Goffman 1963; Foucault 1977; 1978). Parker and Aggleton suggest viewing stigmatization and discrimination as social processes inherently linked to power and domination. This process devalues certain groups while other groups maintain superiority. In other words, stigma is a process inherently linked to social inequality that leads to individuals within certain groups being socially marginalized and devalued (Parker and Aggleton 2003). Individuals respond to and manage stigmatization and discrimination in different ways.

Using Charles Tilly's studies of social movement activism (Tilly, Tilly, and Tilly 1975; Tilly 1978), Siegel and colleagues (1998) found that HIV-positive MSM managed

stigmatization and discrimination on a continuum ranging from reactive to proactive. Those who employ a reactive strategy will act defensively in order to diffuse or mitigate the impact of stigma and discrimination. In Siegel and colleagues' study, gay and bisexual men attempt to avoid stigmatization by withholding their HIV-positive serostatus or by disclosing under 'safe' conditions and to certain individuals. When selectively deciding whom to disclose to, men considered the 'strength' of the relationship, the potential for support and intimacy, and the other person's need to know. Men who used a reactive approach and withheld their HIV-positive status had lower self-esteem and accepted their stigmatized identity (Siegel et al. 1998). This way of coping could lead to MSM engaging in risky behaviors that could lead to an increased risk of acquiring HIV. Those who employ a proactive approach to dealing with stigma preemptively disclosed their HIV-positive serostatus in order to be in control of the circumstances in which they disclose, and to do so "on their own terms" (Siegel et al. 1998:18). Some of these men who preemptively disclose hope to avoid unwanted questions, and to create an atmosphere where discussion and honesty is normal. These individuals may initially be exposed to more discrimination and stigmatization, but these individuals may make healthier and safer decisions when having sex. In addition, Siegel et al. found that those who were proactive with their HIV-status had access to more resources, communities, and social support (1998).

Racial minorities, especially black and Hispanic MSM, are confronted with multiple stigmas and may not have access to resources and social support available to white MSM. Blacks and Hispanics may face additional pressures because homosexuality, bisexuality, and HIV are more highly stigmatized in their communities (Washington State

Department of Health 2011; Brooks et al. 2005). Some MSM, most noticeably black men, have sex with men, do not discuss their HIV serostatus and engage in risky sex behaviors. In certain areas it is common for black MSM to engage in "sneaky" sex with men even if they do not identify as gay or bisexual (Lichtenstein 2000). In other locations some black MSM do identify as gay and bisexual but do not tell their female sex partners about their male sex partners and unsafe sex practices (Barash and Chipps 2009). One study suggests that up to 45% of black MSM also have sex with women. This suggests that, black MSM at least, are acting on the "down low" and may serve as a "bridge" for transmission to women and probably accounts for the high HIV rates among black men and women (Millett 2004). MSM and Black and Hispanic MSM in particular, may choose to withhold their sexual behaviors or their HIV status to sex partners, significant others, and family members because of fear of stigmatization and rejection from their community. Without the social support of those closest to them, blacks and Hispanics may be more likely to engage in risky behaviors, and more likely to withhold their HIV status from their sex partners.

Identity and Community

In addition to stigma playing an important role for MSM in deciding whether to disclose HIV status, identity and community may also play an important role in this process. Social groups that you positively identify with (i.e., that you feel good about and are important to you) contribute to a sense of you being a good person. Thus having a generally positive gay self-identity is thought to be associated with high self-esteem, higher levels of wellbeing, and low psychological distress (Pelham and Swann 1989; Frable, Wortman, and Joseph. 1997). In addition, a study of mostly white men found that

that being visibly gay and associating with gay communities are positively related to having a positive gay identity. Also, experiencing stigma, especially from family members, is negatively associated with a positive gay identity and positive self-perceptions (Frable et al. 1997). The study found that having gay friends and attending gay social events are associated with a positive gay identity and in turn a positive gay identity is related to high self-esteem, better wellbeing, and low levels of stress, with a positive gay identity acting as a mediating variable (Frable et al. 1997). Morton and Duck (2011) found having a positive gay identity is associated with being connected to gay communities and media resources. Additionally, those that perceived being a part of a socially supportive community were more likely to have a positive attitude towards safe sex.

In addition to identity and community, age may be an important factor in determining disclosure. Gay men who experienced the early days of the AIDS epidemic in the 1980s and witnessed the deaths of many of their friends die in the 1990s may have a different relationship with HIV than their younger counterparts. In a time of crisis, it was important for gay communities to emotionally support each other and to help raise awareness about the disease. Some studies suggest that older men are more likely to disclose their status to friends and family (O'Brien et al. 2003*)*.

SES, particularly education, may also be an important indicator of disclosure, in addition to race and age. A highly educated person may have access to more resources, the ability to seek out information, and be more connected to their community. SES is positively related to better health and self-reported health as well as positive health-promoting behaviors (Mirowsky and Ross 2008; Smith 2005). In addition, higher

socioeconomic status (SES), including income, is associated with having more control over one's health and having higher levels of social support, and smoking and drinking less (Ross and Wu 1995).

Thus, MSM who identify as gay or bisexual and are connected to a network of other gay men should have higher self-esteem, higher wellbeing and better perceptions about safe sex. These MSM should be more likely to disclose their HIV status to their sex partners. Conversely, MSM who do not identify as gay or bisexual, yet still have sex with men may be more likely to withhold their HIV status. In addition, not having a positive gay identity, or not feeling a part of a community of gay men, can lead to low self-esteem, lower wellbeing and can lead to engaging in risky behaviors.

If individuals engage in risky behaviors such as alcohol and drug use, meeting sex partners in parks or sex clubs, or having multiple casual sex partners, they are less likely to discuss disclosure with their sex partners (Norman et al. 1998; Crepaz and Marks 2003; Fernández-Dávila 2011). Thus it is important in this study to determine if MSM who engage in risky behaviors are less likely to disclose than those who do not engage in such behaviors.

HYPOTHESES

Based on the theoretical frameworks and previous research discussed above, I have the following 6 hypotheses.

(1) Black and Hispanic MSM will be less likely to disclose their HIV status than other race/ethnic groups.

(2) As age increases, the likelihood of disclosure will increase among MSM.

(3) MSM with higher SES will be more likely to disclose their HIV status to sex partners than those with lower SES.

(4) MSM who identity as gay or bisexual will be more likely to disclose their HIV status to their sex partners than those who do not identity as gay or bisexual.

(*5) HIV Positive men will be more likely to disclose their HIV status to their sex partners than HIV negative MSM or MSM who do not know their HIV status.*

(6) MSM who engage in risky behaviors (both sexual and non-sexual in nature) will be less likely to disclose than those who do not engage in such behaviors.

METHODS

Description of Data

Data for this analysis was collected from an intake chart at an HIV/STI clinic in the Seattle over eight years, from 2004 to 2011. Each patient was required to fill out the intake chart at each visit but answering questions were voluntary. The clinic is a non-profit gay men's health center (referred to as Gay Town Health Center or GTHC) that provides free HIV and STI testing, counseling, and support groups for gay, bisexual, and transgendered MSM. GTHC only recently began testing for STIs in 2011, thus there is only a small number of HIV-positive MSM in this sample (2%). The question concerning disclosure asks, "How often do you tell your anal sex partners your HIV status?" Demographic information collected included date of birth, race/ethnicity, sex/gender, zip code[1], country of origin[1], highest education, income, and sexual identity. HIV testing/health care information collected includes current HIV status, whether a patient

[1] Zip code and country of origin were not used in the analysis

thinks he has a primary HIV infection (and if so, last negative test date), regular primary care physician (PCP), being out to the PCP, health insurance, reasons for testing, and cigarette use. Sexual history includes history with both men and women, the number of sex partners in the past two and twelve months, engagement in insertive or receptive anal intercourse, and STI history. Risk behaviors collected include having sex with someone known to be HIV-positive, sex with an intravenous drug user, trading sex for drugs or money, where patients meet their sex partners (bathhouse/sex club, internet site, bar/club, park, or other place), drug use, condom use for insertive and receptive anal sex in the past two and twelve months, and risks described as "other".

Measures

Outcome variable. The outcome variable of disclosure appeared on two slightly different versions of the intake chart. On the earlier version, the question is asked, "how many of the men you had anal sex with in the last 12 months did you disclose your HIV status to?", and respondents could write in any number. On the new version of the intake chart, the question is asked, "how often do you tell your anal sex partners your HIV status?", and respondents could choose "always", "usually", "sometimes", or "never". First I created a dummy variable from the earlier disclosure variable. I subtracted the number of men that respondents said they disclosed to in the previous 12 months from the number of anal sex partners the respondents reported to have had in the previous 12 months. If the number was greater than or equal to 1, then the respondent always disclosed his HIV status to his sex partners, coded as (1). If the number was less than 1, then the respondent did not always disclose, coded as (0). To create a dichotomous variable for *disclosure of HIV status*, anyone that chose "always" to the disclosure

question on the new intake chart was coded as (1) for always disclosing, while anyone that responded "usually", "sometimes", or "never" to always disclosing was coded as (0) for not always disclosing his HIV status. Next I created an omnibus disclosure variable by combining responses to these two questions, where I combined both disclosure variables where (0) was coded for not always disclosing, and (1) was coded for always disclosing.

Demographic variables. *Age* was measured in actual years, as filled in by the individual on the intake chart. On the intake chart, *education* is separated into 6 categories: (1) "8th grade or less", (2) "some high school (i.e., 9th grade or more but did not graduate)", (3) "high school graduate or GED", (4) "some college, Associate's degree/technical school training", (5)"college degree", or (6) "post graduate degree". For the analysis I condensed the categories into three dummy variables: "high school or less" (categories 1-3),, "some college" (category 4), and "college or post graduate degree" (category 5 and 6). Respondents were asked to provide "monthly *income* from all sources before taxes", and responses ranged from $0 a month to over $160,000 a month. I set those with missing income at the median of $2,000 a month. A dummy variable for missing income was also generated if an individual was missing from the original income variable. I did not run my models with the missing income variable.

Race. On the intake chart, individuals are able to choose from multiple race categories as well as a separate category for ethnicity (i.e., Hispanic versus Non-Hispanic). Mutually exclusive categories were needed to complete the analysis, thus a hierarchy was created in which respondents who reported being of Hispanic origin no matter what their reported race was categorized as "Hispanic." Non-Hispanic respondents

who identified as “black” only or “black” and any other race(s) were categorized as “black”. A similar pattern of categorization followed for Asians, Native Americans and Pacific Islanders, respectively. Non-Hispanic respondents were only identified as “white” if they reported “white” as their only race. *Sexual Identity*. Dummies were created for the five sexual identity categories, taken directly from the intake chart (gay, bisexual, straight, queer, or other). *HIV Status* was calculated using both the results of testing done at GTHC and, if no testing was done, the answer to the question “What is your HIV Status” or “Have you ever been tested?” on the intake chart. From that dummies were created for HIV Positive, HIV Negative, and HIV unknown statuses.

Variables of Interest. Risky sexual behaviors, defined as *condom* use was compiled from a matrix on the intake chart, where men respond to their condom use (never, sometimes, usually, always) with sex partners of HIV positive, HIV negative, and HIV unknown statuses, separated by insertive and receptive anal sex in the last 12 months and the last two months. First dummy variables were created for insertive and anal sex in the last 12, with (1) for always using a condom, and (0) for not always using a condom. The same was done for receptive anal sex, and then the steps were repeated for insertive and receptive anal sex in the previous two months. After all dummies were created, an omnibus dummy was created with (1) always using a condom for receptive or insertive anal sex, and (0) less than always using a condom for receptive or insertive anal sex.

A count variable was created for the number of *risky behaviors* an individual engaged in. The risky acts included 19 activities: using poppers; trading sex for drugs or money; sex in a public park; finding a sex partner over the internet; meeting a sex partner

through a newspaper add; meeting a sex partner through a phone sex line; sex with an IDU; sex with an HIV positive individual; meeting a sex partner at a bar; meeting a sex partner at a bathhouse; having anonymous sex; injecting drugs; sharing a needle with an HIV positive individual; sharing needles or using a dirty needle; using methamphetamine, heroin, GHB or K (ketamine), ecstasy, cocaine, crack cocaine, drinking alcohol, and smoking marijuana.

Analytic Strategy

A multivariate logistic regression of disclosure of HIV status to anal sex partners among MSM was conducted, because a linear probability model is the type of regression that is applied to a binary dependent variable, such as disclosure (Long 1997). First, I ran bivariate models regressing individual variables on disclosure. Next I ran nested models, starting with demographic variables, and added the behavioral variables last.

RESULTS

Description of Statistical Sample

In table 1 I present a description of the data. There are a total of 10,783 MSM in this study. 35% men did not always disclose their HIV status to their anal sex partners. The mean age is 33.6 years (*SD*=10.46), with a range from 15 to 79 years of age. 11% have a high school degree or less; 31% have completed some college, while 58% have completed college or a post-graduate degree. The average income is $15,704/month (*SD*=631.62), and the median household income was $2,000/ month. 8% of respondents did not report their monthly income. The race/ethnic breakdown is as follows: 69% are Non-Hispanic white; 5% are Non-Hispanic black; 14% are Hispanic/Latino; 9% are Non-

Hispanic Asian; 1% are Non-Hispanic Native Hawaiian/Pacific Islander; and 2% are Non-Hispanic Native American/Native Alaskan. The majority, 86%, identify as gay; 11% identify as bisexual; 1% identify as straight; 2% identify as queer; and 0.33% identified as something else, but was not specified. A small portion, 2%, of individuals were HIV-positive at their last visit to the clinic; 98% were HIV-negative; and 0.09% did not know their HIV status. Just over half, 57%, always used a condom during anal intercourse with their sex partners, while 43% did not always use a condom during anal sex with their sex partners. 4% individuals had not engaged in any risk behaviors; while a vast majority 69%, engaged in 5 or fewer risky behaviors; 21% engaged in 6 to 9 risky behaviors; while 5% engaged in 10 or more risky behaviors.

[Insert Table 1 About Here]

Bivariate Analysis Results

I present bivariate results in Table 2. For dummy variables, the odds ratio represents the relative odds of disclosing HIV status compared to the referent group. For instance, an odds ratio of .81 for African American men (See Table 3, Model 1) indicates that African American MSM in this sample are .81 times as likely to disclose their status compared whites or that African American men have a 19% lower odds of disclosing compared to whites, who are the referent category. For continuous variables (such as age or income), the odds ratio represents the relative odds of disclosure of HIV status for a one-unit increase in the continuous variable.

Compared to whites, identifying as African American lowers the odds of disclosure by18% and identifying as Hispanic lowers the odds of disclosure by 24%. Compared to those with a college or post-graduate degree, having only some high school education lowers the odds of disclosure by 38%, and having some college education lowers the odds by 9%. Compared to gay-identified men, identifying as bisexual lowers the odds of disclosure by 26%, and identifying as straight lowers the odds of disclosure by 75%. Compared to someone that does not engage in any risky behaviors, engaging in one risky behavior lowers the odds of disclosure by 2%, and the more risky behaviors one engaged in, the less likely they are to disclose their HIV status. Compared to those who are HIV negative, not knowing one's HIV status lowers the odds of disclosure by 77%. All of these findings are significant, and none of the other bivariate associations are statistically significant.

[Insert Table 2 About Here]

Multivariate Analysis Results

I use logistic regression analysis using nested models to determine the likelihood of a MSM disclosing his HIV status to his anal sex partners. In Table 3, I report the effects of my independent variables on the likelihood of disclosure in odds ratios, with standard errors in the next column.

[Insert Table 3 About Here]

Model 1 includes race/ethnicity and age. Net of respondent's age, African Americans have a 19% lower odds of disclosure ($p < .05$) compared to whites, and Hispanics have a 25% lower odds of disclosing ($p <.001$). In Model 2, I introduce measures for income and education. The odds of disclosure for African Americans is 17% lower the odds of whites, but this is marginally significant ($p = .058$). The likelihood of Hispanics disclosing increases and remains significant, but Hispanics are still less likely to disclose compared to whites. Age is statistically significant ($p < .01$) but the odds ratio is 1.0, which indicates there is no difference in disclosure across age. This does not change across models. Compared to those with a college or post-college degree, the odds of disclosure for someone with only high school education is 33% lower ($p < .001$), and the odds of disclosure for someone with only some college is 12% lower ($p < .05$).

In Model 3 I adjust for sexual identity, using gay as the reference category. Compared to those who identify as gay, identifying as bisexual lowers the odds of disclosure by 21% ($p <.001$) identifying as straight lowers the odds of disclosure by 72% ($p < .001$). For both African Americas and Hispanics, the likelihood of disclosure increases slightly, but for African Americans this is no longer a significant association. This suggests differences in identity help to explain some of the racial differences we see in disclosure.

In Model 4 I adjust for risky behaviors. For every additional risky behavior the MSM in this sample engages in, the odds of disclosure decreases by 4% ($p < .001$). The coefficients for bisexual, straight, Hispanic men remain the same but the coefficient for African American become significant again. The likelihood of disclosure remains the

same for those with an education of high school or less, and the odds ratio for those with some college becomes insignificant.

In Model 5, I adjust for condom use (risky sex). Compared to those who always use a condom, not always using a condom during anal sex lowers the odds of disclosure by 9%($p < .05$). In the last model (Model 6), I adjust for HIV status. There is no significant difference in disclosure for those who are HIV positive, HIV negative, or those who do not know their HIV status. The odds ratios for condom use, risky behaviors, straight-identified men, those with less than a college degree, and African American and Hispanic men remain the same.

DISCUSSION

Summary of findings

Over half (65%) of the sample of MSM reported always disclosing their HIV status to their anal sex partners. As expected, both African American and Hispanic MSM are less likely to disclose than whites and other race/ethnic groups, supporting hypothesis 1. In the fully adjusted model being African Americans lowers the odds of disclosure by 18%, compared to whites and being Hispanic lowers the odds of disclosure by 17% to disclose. These racial minorities may face stigma due to their race within the gay community, and within their own communities. They may be stigmatized for having sex with men, identifying as gay, or being HIV positive. Prevention campaigns may need to target these populations specifically, making sure African American and Hispanic MSM receive proper counseling and are understanding of the importance of disclosure.

Counter to what I expected, older MSM are not more likely to disclose their HIV status to their sex partners, in fact, the odds ratio remains 1.0 in each model suggesting there is no difference in disclosure across age. This does not support my second hypothesis. I expected that older MSM understood the importance of disclosure because of living through the early days of the HIV epidemic. However, younger men are frequently targeted by HIV testing and prevention campaigns, and this may contribute the age equity in terms of disclosure. One study of HIV-positive men disclosing their status to their mothers found that older men were actually less likely to disclose than younger men (Sheehan, Uphold, Bradshaw et al. 2005). This is one area that needs further research. I suspected that higher SES was correlated with an increased likelihood of disclosure (hypothesis 3). This holds true for education. Compared to those with a college degree or more having only some high school lowers the odds of disclosure by 28%, as expected. There was no significant difference between those with some college or those with a college degree. This could be because many of those who reporting having only some college education were currently *in* college where there is a new world of sexual freedom. Those who are currently in college could be engaging in risky behaviors such as risky sex behaviors, or using alcohol and drugs. In addition, income is not a predictor of disclosure at all, as the odds ratio remained 1.0. Income may be a weak indicator of SES as they relate to health behaviors (Mirowsky and Ross 2008), and this finding also suggests that other characteristics are much stronger indicators of disclosure than income and some college education.

Men who identify as gay and bisexual are much more likely to disclose their HIV status to their sex partners than those who identify as straight, supporting my fourth

hypothesis. However, the findings are more nuanced. Identify as straight lowers the odds of disclosure by 74% compared to the odds of gay-identified men disclosing, and identifying as bisexual lowers the odds of disclosure by 24%. This suggests that the gay identity is influential in the decision to disclose. Bisexual men may have their own community that they identify with, and different mechanisms may impact disclosure for this group. Those who identify as straight but still have sex with men most likely do not relate to the gay community at all. Community can exert a powerful force over behavioral norms that straight-identified men do not experience.

There is no statistically significant difference in disclosure across HIV status in the fully adjusted model. In other words, there is not a significant difference in disclosure between HIV positive and HIV negative MSM. This finding is counter to my hypothesis that HIV positive men would be more likely to disclose their HIV status to their sex. Both HIV positive and HIV negative men may be relying on other cues to discern HIV status – such as the visible health of the sex partner, or the assumption that their sex partner is of the same HIV status. I do not have a way to capture if the MSM in my sample are serosorting, but if this is a behavior present in this community, then both HIV positive and HIV negative men are putting themselves at risk of transmission and exposure.

As expected, compared to those who do not engage in any risky behaviors, the odds of disclosing decreases by 3% for those MSM who engage in one risky behavior and the likelihood decreases with each additional risky behavior. Behaviors such as drug and alcohol use affect an individual's decision-making processes. Under the influence, men might seek sex partners in risky settings such as a bathhouse or park where there is a norm of having multiple anonymous sex partners. In addition, many MSM may select not

to disclose in the heat of the moment, or to not ruin the mood. Compared to those who always use a condom, not always using a condom decreases the odds of disclosure by 9%. Prevention campaigns need to stress the importance of using multiple strategies of protection, including always using a condom and disclosure of HIV status. These findings suggest that MSM engage in risky behaviors such as not using a condom despite disclosing. In addition, MSM are still putting themselves at risk by not disclosing regardless of HIV status.

Limitations and future research

Several limitations in this study need to be considered when interpreting my results. Though the community-based organization used for this analysis may be similar to other organizations across the country, the sample is limited to Seattle, and thus cannot be generalized to the entire MSM population in the United States. Furthermore, this sample does not include MSM who seek care from primary care physicians or the public health STD clinic. It is possible the demographics of those who seek services from this community-based organization are different than the general MSM population.

Furthermore, there were several limitations to the data. Better indicators could be used to measure SES and community involvement besides income and education. In addition, there may have been some issues with the self-reported income variable that I was unable to capture. There were a small number of MSM in the sample who were identified as HIV positive or HIV unknown, potentially weakening the significance of my findings. Also there were no direct measures of stigma, thus I had no way of concretely measuring the possible influence of stigma felt on African American and Hispanic MSM.

Future research on disclosure should include questions concerning stigma, identity and connection to community. In addition more data could be collected on an individual's history relating to the AIDS epidemic. Understanding why older MSM are found to be less likely to disclose could influence future prevention strategies and campaigns. More comparative studies should be completed to understand the behavioral differences between HIV positive and HIV negative MSM. Future research in this area should collect data in order to better understand the relationship between disclosure and serosorting. More data should be collected on beliefs about having HIV or becoming infected with HIV. Perhaps there is a belief that HIV is no longer a death sentence, and more of a chronic disease that can be treated and maintained, and this in turn can influence behaviors and decision-making. More data should also be collected on new ways in which MSM find their sex partners, as well as information about most recent sex partners. Understanding how online and mobile hook-up sites (such as Grindr, Scruff, or Adam4Adam) influence men's decisions to disclose and other behaviors can greatly influence how MSM are targeted for future prevention campaigns.

CONCLUSION

Disclosure of HIV status among MSM is thought to be an important part of negotiating safe sex. In order to safely make a fully informed decision about using a condom when having sex, both partners should be aware of the other partner's HIV status and current STIs. However, disclosure does not always occur, and when it does it is still unclear if it influences a person's decision to have safe sex. A first step is to understand the characteristics of MSM who do and do not disclose their HIV status to their sex

partners. In this study I found that African American and Hispanic MSM, those with less than a high school degree, and those who identify as bisexual or straight are less likely to disclose their HIV status. In addition, engaging in risky behaviors such as drug and alcohol use, anonymous sex, and not always using a condom decrease the likelihood that one will disclose. Finally, there is no significant difference in disclosure among HIV positive and HIV negative men. It appears that MSM engage in risky behaviors such as not using a condom despite disclosing, and MSM are still putting themselves at risk by not disclosing regardless of HIV status. These findings suggest that disclosure does not greatly influence decisions to engage in safer sex behaviors.

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Table 1. Demographic Characteristics of Analytic Sample (N=10,783)

	N/*Mean*	%/*SD*
Always Discloses		
Yes	7,043	65.32
No	3,740	34.68
Male	10,783	100.00
Age	*33.60*	*10.46*
14-19	317	2.94
20-29	4322	40.09
30-39	3279	30.42
40-49	1990	18.45
50-59	638	5.93
60 and older	237	2.20
Education		
High School or Less	1,197	11.10
Some College	3,374	31.29
College or More	6,212	57.61
Income ($ per month)	*15,704.14*	*631,617.90*
Race/ethnicity		
Non-Hispanic White	7,433	68.93
Non-Hispanic Black	521	4.83
Hispanic	1,485	13.77
Non-Hispanic Asian	970	9.00
Non-Hispanic Pacific Islander	129	1.20
Non-Hispanic Native American	245	2.27
Sexual Identity		
Gay	9,233	85.63
Bisexual	1,209	11.21
Straight	70	0.65
Queer	235	2.18
Other	36	0.33
HIV Status		
Positive	209	1.94
Negative	10,564	97.97
Unknown	10	0.09
Always Uses a Condom		
Yes	6,141	56.95
No	4,642	43.05
Risky Acts	*4.11*	*2.70*
0	463	4.29
1	1,081	10.03
2	1,804	16.73
3	1,894	17.56
4	1,594	14.78
5	1,154	10.70
6	873	8.10
7	644	5.97
8	480	4.45
9	306	2.84
10 or more	490	4.55
Overall Sample	10,783	100.00

TABLE 2. Odds Ratio Bivariate Correlations Among Key Variables and Disclosure (N=10,783)

	OR	SE
Race/Ethnicity		
Non-Hispanic White (reference)		
Non-Hispanic African American	0.82*	0.08
Hispanic	0.76***	0.04
Non-Hispanic Asian	0.94	0.07
Non-Hispanic Pacific Islander	1.21	0.24
Non-Hispanic Native American	1.12	0.16
Age	1.00	0.00
Income	1.00	0.00
Education		
High School or Less	0.62***	0.04
Some College	0.91*	0.04
College or More (reference)		
Sexual Identity		
Gay (reference)		
Bisexual	0.74***	0.05
Straight	0.25***	0.06
Queer	1.08	0.15
Other	0.57	0.19
Risky Behaviors	0.98***	0.01
Condom use	0.93	0.04
HIV Status		
HIV Negative (reference)		
Hiv Positive	0.99	0.14
HIV Unknown	0.23*	0.16

Table Notes:

* p < .05; ** p < .01; *** p < .001

OR: Odds Ratio

SE: Standard Error

TABLE 3. Multivariate Analysis of Disclosure of HIV Status to Anal Sex Partners

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Race/Ethnicity												
Non-Hispanic White (reference)												
Non-Hispanic African American	0.81**	0.08	0.83	0.08	0.84	0.08	0.82*	0.08	0.82*	0.08	0.82*	0.08
Hispanic	0.75***	0.04	0.84*	0.05	0.85*	0.06	0.83**	0.05	0.83**	0.05	0.83**	0.05
Non-Hispanic Asian	0.93	0.07	0.92	0.07	0.93	0.07	0.90	0.07	0.89	0.07	0.89	0.07
Non-Hispanic Pacific Islander	1.19	0.23	1.16	0.23	1.16	0.23	1.15	0.23	1.15	0.23	1.15	0.23
Non-Hispanic Native American	1.11	0.16	1.19	0.18	1.19	0.18	1.22	0.18	1.21	0.18	1.21	0.18
Age	1.00	0.00	1.00**	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Income			1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Education												
High Schoo or Less			0.67***	0.05	0.71***	0.05	0.71***	0.05	0.72***	0.05	0.72***	0.05
Some College			0.88*	0.04	0.89*	0.04	0.91	0.04	0.91	0.04	0.91	0.04
College or More (reference)												
Sexual Identity												
Gay (reference)												
Bisexual					0.79***	0.05	0.77***	0.05	0.75***	0.05	0.76***	0.05
Straight					0.28***	0.08	0.27***	0.07	0.26***	0.07	0.26***	0.07
Queer					1.05	0.16	1.08	0.16	1.08	0.16	1.08	0.16
Other					0.58	0.20	0.59	0.20	0.58	0.20	0.58	0.20
Risky Behaviors							0.96***	0.01	0.97***	0.01	0.97***	0.01
Condom Use									0.91*	0.04	0.91*	0.04
HIV Status												
HIV Negative (reference)												
HIV Positive											1.11	0.18
HIV Unknown											0.32	0.23
R-square	0.00		0.00		0.01		0.01		0.01		0.01	

Table Notes:

* p < .05; ** p < .01; *** p < .001

OR: Odds Ratio

SE: Standard Error