Differences by Latino and White MSM in HIV-Related Stigma in Seattle, WA

Emmanuel F. Rodriguez

A thesis

submitted in partial fullfillment of the

requirements for the degree of

Master of Public Health

University of Washington

2019

Committee:

Jennifer Balkus

Sara Glick

Program Authorized to Offer Degree:

Epidemiology

University of Washington

Abstract

Differences by Latino and White MSM in HIV-Related Stigma in Seattle, WA

Emmanuel F. Rodriguez

Chair of the Supervisory Committee:

Jennifer Balkus

Department of Epidemiology

Background: Despite advances in the care and treatment of people living with HIV infection, HIV-related stigma remains a challenge to HIV testing, care, and prevention. HIV disproportionately affects Latino men who have sex with men (MSM) and previous work has cited stigma as a barrier to HIV prevention practices in this population. Because stigma promotes negative attitudes that interfere with public health responses to HIV disparities, stigma is a formidable public health challenge. Our study compared the prevalence of perceptions of community stigma towards people living with HIV (PLWH) and experiences of HIV-related discrimination between white and Latino MSM. **Methods:** We conducted a secondary analysis of cross-sectional data from the CDC's National HIV Behavioral Surveillance (NHBS) survey from the Seattle area. Participants (n=633) were selected from two of the MSM centered NHBS cycles (2014 and 2017). **Results:** After adjustment, race/ethnicity was not significantly associated with any of the HIV-related discrimination items overall or in any of the cycles, although 8% of MSM in our study reported being physically attacked or injured and 44% of our overall sample reported any discrimination. For each item related to perceived stigma towards PLWH, Latino MSM reported higher frequencies of perceived stigma compared to white MSM. After adjustment, Latino MSM were more likely to report perceived stigma towards a PLWH in the form of

discrimination overall (aIRR=1.44, 95% CI, 1.05-1.96) and in the 2017 cycle (aIRR=1.78, 95% CI, 1.13-2.80), perceived stigma in the form of not supporting the rights of a PLWH but only in the 2017 cycle (aIRR=2.39, 95% CI, 0.99-5.79), perceived stigma in the form of not being friends with a PLWH but only in the 2014 cycle (aIRR= 2.04, 95% CI, 1.00-4.17). **Conclusion:** Latino MSM in Seattle were more likely to report perceived stigma toward PLWH compared to white MSM and reports of HIV-related discrimination were common among both white and Latino MSM. Both white and Latino MSM in Seattle may face the consequences of HIV-related stigma in discrimination including physical injury. Local public health practitioners and community organizations should develop targeted anti-stigma interventions that facilitate understanding of root causes of stigma while incorporating cultural and social context.

INTRODUCTION

Despite advances in the care and treatment of people living with HIV infection, HIV-related stigma remains a challenge to HIV testing, care, and prevention. HIV is highly stigmatized due to its historic association with already marginalized groups including gay men and people who inject drugs. As such, men who have sex with men (MSM) who are at increased risk of acquiring HIV may be less likely to engage in health-seek behaviors, namely HIV testing [1]. Individuals who experience HIV-related stigma may also be less likely to engage with the healthcare system, have reduced psychosocial functioning, and report increased sexual risk behaviors [2-4]. Because stigma dehumanizes groups that are disproportionately burdened by a disease and simultaneously promotes negative attitudes that preclude public responses to these disparities, stigma is a major public health challenge.

According to the Centers for Disease Control and Prevention's HIV Surveillance Report from 2012 to 2016, HIV diagnoses among Latinos increased by 12% [5]. The increase in the Latino population, despite advances in HIV prevention and treatment, speaks to the insidious impact of stigma as it is preventing people from receiving life-saving care. In King County, Washington, which includes Seattle, prevalent and new infections disproportionately affect Black and Latino MSM, with recent data showing that while 10% of Seattle residents are Latino, 13% of persons diagnosed with HIV in Washington State are Latino [6]. A study of Latino MSM in Seattle comparing those who tested for HIV versus those who had never tested demonstrated that Latino MSM cite fear of rejection and stigma in the form of insults from family, partners, and the community as a major barrier to testing [7]. These findings suggest that HIV-related stigma is a legitimate fear among Latino men in the Seattle area and possibly other comparable regions.

While race and ethnicity have been evaluated in HIV-related stigma research, there are currently gaps in research regarding this stigma within Latino MSM, which may at least in part explain the increases in HIV incidence [5]. Data are limited on the frequency of HIV-related stigma among men at risk for HIV infection compared to their non-Latino counterparts. The vast majority of studies measuring HIV-related stigma and discrimination have been restricted to HIV-infected MSM. While addressing the experiences with stigma of Latino MSM living with HIV is

critical, it is also urgent to assess stigma among those at risk of acquiring HIV in order to understand key barriers to preventive practices. Exploring the relationship between Latino MSM and HIV-related stigma and discrimination will help inform HIV culturally relevant prevention efforts for this diverse group of MSM.

Although advances in HIV science have moved HIV from an untreatable, fatal disease, to one that is both easily treatable and preventable with antiretroviral medications, stigma continues to hinder both prevention and treatment efforts, especially within different communities in the US, including Latino MSM. To address this gap, we compared the frequency of reported HIV-related stigma and HIV-related discrimination between self-reported white MSM and Latino MSM in the Seattle area who participated in the National HIV Behavioral Surveillance (NHBS) survey.

METHODS

Overall Study Design

This secondary analyses used data collected from MSM who participated in the NHBS survey. A detailed description of NHBS has been presented previously [8-10]. In brief, NHBS is a national behavioral surveillance project among persons at high risk of acquiring HIV, including MSM. Cross-sectional surveys were administered in 22 metropolitan areas with a high prevalence of HIV. Surveillance activities for MSM are conducted every three years and include the collection of data relating to behavioral risk factors for HIV, including stigma, HIV testing behaviors, the receipt of prevention services, and use of prevention strategies. The MSM cycles of NHBS used a multistage venue sampling scheme to elucidate the frequency of risk behaviors among MSM attending public venues, such as bars, dance clubs, business establishments, social organizations, sex establishments, and street locations. This analysis used data collected from participants enrolled at the Seattle site during the two most recent NHBS MSM cycles (MSM4 conducted in 2014 and MSM5 conducted in 2017). Given the CDC's requirement for NHBS that >50% of the men be MSM, all venues were located in Seattle, with the exception of one venue in the 2014 cycle that was located in a suburb of Seattle. The 2014 cycle of the NHBS was approved by the Washington State IRB and because the 2017 cycle was determined to be a

surveillance activity, it was not subject to IRB review. Our analysis of de-identified data was not determined to be human subjects research.

Study Participants

Participants in the MSM cycles of the NHBS identified as male, at least 18 years of age, and reported ever having oral or anal sex with another man. Participants provided informed consent and had to be able to complete the survey in English or Spanish. All men recruited from the 2014 and 2017 Seattle NHBS cycles who reported at least one male sex partner in the past year and self-reported as HIV seronegative were included in the analysis.

National HIV Behavioral Surveillance Survey

Standardized structured interviewer administered questionnaires were utilized to collect all study data. Surveys were conducted in English or Spanish based on the preference of the participant. Data were collected on demographic characteristics, including age, education, income, sexual preference, housing status, and health insurance status. Trained interviewers in all NHBS project areas used a standardized, anonymous questionnaire to collect information on sociodemographic and behavioral characteristics, including drug and alcohol use, number of male partners, sexual risk behaviors, self-reported diagnosis of sexually transmitted infections, history of HIV testing, HIV prevention knowledge, experiences with HIV-related stigma, discrimination and perceptions of people living with HIV/AIDS (PLWH).

Race/Ethnicity

Race and ethnicity categories (white versus Latino) were the primary exposures of interest. Because NHBS racial categories do not include Latino/Hispanic as a racial category, self-reported Latino/Hispanic ethnicity was used to classify Latino identity as an exposure. Participants were defined as white if they reported “white” as their racial category, they did not report any other racial categories and they did not report being Latino/Hispanic as their ethnicity. Participants were defined as Latino if they reported Latino/Hispanic as their ethnicity, regardless

of the racial category (i.e. men who identified as white and also identified as Latino/Hispanic were classified as Latino).

HIV-Related Stigma

The primary outcomes of interest were participant perceptions concerning PLWH and participant experiences with HIV-related discrimination. Perceptions of PLWH were assessed using a self-reported measure of stigma that included a four point questionnaire in the core survey for both MSM cycles, which were adapted from two sources [11-12]. Each question required the participant to rate the degree to which they agreed or disagreed with each statement on a 5-point Likert scale (see Appendix). For this analysis, responses from the Likert scale were collapsed to create three categories: agree or strongly agree, neither agree or disagree, and disagree or strongly disagree. To assess participants' experiences with HIV-related stigma and HIV related discrimination, participants were asked a series of nine questions. These items were chosen because they assess the basic components of stigma, namely labeling, stereotyping, and differential treatment. In addition, participants were also asked questions related to experiences with discrimination because someone knew or assumed a participant was attracted to men. Responses to these items were dichotomous (yes or no). Participants were considered to have knowledge of HIV prevention if they answered "Yes" to the questions: "In the past 12 months, have you had a one on one conversation with with an outreach worker, counselor, or prevention program workers about ways to prevent HIV. Don't count the times when you had a conversation as part of an HIV test?" and "In the past 12 months, have you been a participant in any organized session(s) involving a small group of people to discuss ways to prevent HIV? Don't include discussions you had with a group of friends". The rationale for including HIV knowledge questions was that if a participant had a proper knowledge base of how HIV is transmitted and prevented, they would report less stigma because misconceptions and fear are are debunked.

Data Analysis

Descriptive statistics were used to summarize key demographic and behavioral characteristics, including being classified as "high risk", between white and Latino MSM. The

Washington State Department of Health and Public Health - Seattle & King County PrEP Guidelines [6] classify an individual as high risk if, in the past 12 months, they reported a sex partner who was assigned male at birth *and* reported one or more of the following: >10 sex partners; methamphetamine or popper use; condomless anal sex with a partner (CAI) who had HIV or did not know their status; or a bacterial STI diagnosis (chlamydia, gonorrhea, or syphilis). Differences by race/ethnicity overall and within each cycle were compared to determine if there were important differences within groups by cycle. For categorical variables, the chi-squared test was used to assess differences between white and Latino MSM. Poisson regression models for each cycle and then a combined model for both years were created and used to assess associations between race/ethnicity and questions related to participants' perceptions concerning PLWH and participant experiences with HIV-related stigma. Potential confounders were included in the adjusted model if they had hypothesized relationship with the exposure and the outcomes and there was a significant relationship between the factor of interest, race/ethnicity and HIV related stigma. Multivariable models included controlled for age, education, income, and HIV prevention knowledge, and survey year. Two-tailed p-values less than 0.05 were considered statistically significant. All analyses were performed using STATA/SE version 14.2 statistical software (StataCorp LLC, College Station TX).

RESULTS

The total sample size for the combined NHBS dataset was 818 participants. Of these 818 participants, 34 were excluded as they did not meet the race/ethnicity inclusion criteria and 133 participants were excluded as they self-reported as HIV positive at the time of data collection. Those who self-identified as heterseoxual (*n* =18) were excluded from the analysis due to one of the skip patterns in the 2014 cycle in which questions related to the outcome were only asked to participants who self-identified as gay or bisexual. The final sample size was 633 participants. Of these, 50.2% were from the 2014 cycle (n=318) and 49.8% from the 2017 cycle (n=315).

Demographic characteristics of Seattle NHBS participants in aggregate and by cycle are presented in Table 1. Overall, demographic characteristics were similar by cycle and across both

cycles. More than three quarters of the overall sample identified as non-Hispanic white and the vast majority of the participants identified as gay (84%). In the overall sample of MSM, nearly two thirds earned between $35,000-$75,000 or higher, approximately 50% graduated from a four year college, and over 60% reported being insured through a private source or through the workplace. Sixteen percent of participants had talked to a counselor regarding ways to prevent HIV in the past 12 months and less than 4% had participated in a group session in the past 12 months to discuss ways to prevent HIV. Latino MSM tended to younger, less likely to be a 4 year college graduate, report a lower household income, and be uninsured compared to white MSM (Table 1). Latino MSM reported a higher frequency of ever having been tested for HIV and a higher frequency of testing for HIV in the last 12 months compared to white MSM.

Compared to white MSM, a higher proportion of Latino MSM indicated that they were diagnosed with an STI (21% versus 16%; p-value= 0.13), and had 10 or more partners (39% versus 35%; p-value = 0.37) in the past year. Methamphetamine use was more common in white MSM compared to their Latino MSM counterparts (11% versus 6%; p-value = 0.10). Popper use and frequency of any unprotected anal sex with a discordant partner varied by cycle (Table 2). Nearly a quarter (24%) of Latino MSM, overall and across both cycles, reported having had a conversation with a counselor about HIV prevention compared to 13% of white MSM. Overall, the distributions of engagement in high-risk behaviors were similar between the Latino and white MSM participants in our analysis. In our sample, 65% of white MSM and 66% of Latino MSM met the high-risk status criteria.

The proportion of participants overall who reported any form of discrimination during the past 12 months was quite high and did not differ appreciably with respect to race/ethnicity and/or cycle (45% and 41% of the White MSM and Latino MSM, respectively; p-value = 0.35). Discrimination in the form of being called a name or being insulted during the past 12 months was the most common stigma measure, with greater than one third of participants experiencing this form of discrimination (Table 2), with a slightly higher proportion of white MSM reporting being called a name or insulted compared to Latino MSM (37% versus 32%, respectively; adjusted IRR = 0.78; CI 0.56-1.08). The proportion of MSM reporting this form of discrimination was consistent

for Latino MSM across cycles; however, it was higher for white MSM in the 2017 cycle. MSM overall reported discrimination in the form of being physically attacked or injured during the past 12 months, with similar frequencies reported by white and Latino MSM (8% in both groups, aIRR = 0.87; CI 0.44-1.74). Differences in proportions of reports of discrimination in the form of receiving poor service (13% versus 15%; p-value = 0.40) and being treated unfairly at work or school (10% versus 13%; p-value = 0.34) respectively did not differ between white and Latino MSM (Table 3). After adjustment, Latino ethnicity was not significantly associated with any of the HIV-related discrimination items overall or in any of the cycles (Table 3).

Overall, 39% of participants endorsed at least one perceived HIV related stigma toward a PLWH item and almost one third agreed that people in Seattle would discriminate against a PLWH (Table 2). For each item related to perceived stigma towards PLWH, Latino MSM reported higher frequencies of perceived stigma compared to white MSM (Table 2). After adjustment, Latino ethnicity was significantly associated with perceived stigma towards a PLWH in the form of discrimination overall (aIRR=1.44, 95% CI, 1.05-1.96) and in the 2017 cycle (aIRR=1.78, 95% CI, 1.13-2.80), perceived stigma in the form of not supporting the rights of a PLWH but only in the 2017 cycle (aIRR=2.39, 95% CI, 0.99-5.79), perceived stigma in the form of not being friends with a PLWH but only in the 2014 cycle (aIRR= 2.04, 95% CI, 1.00-4.17).

DISCUSSION

In this secondary analysis of data from Seattle-area MSM who participated in NHBS, we hypothesized that Latino MSM would have a higher a prevalence of HIV-related stigma—both perceived stigma toward PLWH and enacted in the form of HIV-related discrimination. Our study provides evidence that Latino MSM in the greater Seattle area were more likely to report perceived community stigma towards PLWH in the form of discrimination compared to white MSM and—especially concerning—nearly 1 in 10 of all MSM in our study reported being physically attacked or injured during the past 12 months. This study is unique in that is assessed the relationship between race/ethnicity and HIV-related and HIV-related discrimination in a group of MSM at risk of HIV, a group widely underrepresented in the area of HIV-related stigma where

mostly HIV-positive MSM populations have been studied. Inclusion of HIV negative men in stigma research is significant because it may unveil new knowledge related to willingness to test for HIV and other important relationships that could be used to target HIV prevention interventions.

Latino MSM reported a moderately high (51%) proportion of perceived stigma toward PLWH in the Seattle area. This finding was consistent with other studies focused on U.S. based gay Latino men in urban cities including Los Angeles, Miami, and New York City in regards to perceived community stigma defined as the belief that PLWH have "gotten what they deserve" and in regards to HIV-related discrimination in the form of instances of verbal and physical abuse and discrimination related to both race/ethnicity and sexual orientation [13-16]. Notably, Latino MSM in our study reported higher frequencies for every question related to perceived stigma towards PLWH in the Seattle area compared to white MSM. While the frequency of *enacted* HIV related stigma in the form of discrimination also varied by cycle, we found no significant associations between race/ethnicity and any of the HIV-related discrimination items overall or in each of the cycles. These findings are consistent with prior work with gay Latinos in urban cities that did not find significant associations between HIV-related discrimination and factors such as HIV seropositivity status, sexual orientation, and Latino ethnicity even though Latino MSM did report moderately high frequencies of HIV-related discrimination in the form of being insulted or called names [15, 17]. We observed that both testing for HIV in the last 12 months and participation in both one on one sessions and group sessions to discuss ways to prevent HIV was more commonly reported among the Latino MSM compared to white MSM. While this may suggest that Latino MSM in our study were more "low risk" or shielded from stigma than what has been observed in other studies [16, 18, 19-22], both Latino and white MSM had a similar frequencies of high risk sexual behaviors.

Despite the fact that Latino MSM bear a disproportionate share of the HIV burden in the US [5], there are few studies that have examined the relationship between Latino ethnicity and HIV-related stigma among MSM at risk for HIV. One study of HIV negative Latinos assessed stigmatizing beliefs held by Latino MSM [13]. When HIV-negative Latino MSM were asked "Do you believe HIV-positive people are responsible for having gotten infected?" and "Do you believe

that HIV-positive people are more sexually promiscuous?," 57% and 52%, respectively, affirmed such statements. A second study among Latino MSM in San Francisco and Chicago reported significant levels of HIV-related stigma in the form of discriminatory actions (perceived and enacted) due to internalized homophobia and personal responsibility beliefs partially mediate such relationship [20]. That is, Latino MSM who have internalized societal negative views about homosexuality (e.g., feeling shame, not wanting to be gay) cognitively project those views onto PLWH [20]. Few studies have focused on comparing HIV-related stigma and/or discrimination between white and Latino MSM. In a literature review of HIV-related stigma within communities of gay men, the authors reported that HIV stigma takes diverse forms and can incorporate aspects of social exclusion, ageism, discrimination based on physical appearance and health status, rejection and violence [23]. However, data on race/ethnicity-based stigma, specifically among HIV-negative men are limited and primarily focus on issues surrounding black gay men or black MSM.

Perceived community stigma has been associated with lower likelihood of HIV testing [24]. While we were not able to prospectively assess HIV testing in this study, the relationship between perceived stigma and HIV testing among Latino MSM warrants attention. While Latino MSM reported a higher proportion of HIV testing in the last 12 months and more commonly attended sessions related to HIV prevention knowledge in the last 12 months, our findings suggest that Latino MSM's health may still be challenged by a complex set of demographic and behavioral factors including higher reports of STI diagnosis, lower socioeconomic status, and lack of health insurance. Further, our finding that Latino MSM perceived HIV-related stigma in the form of discrimination toward PLWH and 15% reported HIV-related discrimination in the form of receiving poor service is also concercing. Together, these factors may contribute to difficulty getting tested for HIV, navigating the healthcare system or society in general as Latino MSM, which may ultimately contribute to HIV vulnerability.

Addressing this stigma is also important given that HIV-related stigma has also been linked to HIV-related risk behavior among MSM. An analysis of national data from the NHBS 2011 MSM cycle found that measures of HIV-related stigma were associated with an increased

likelihood of engaging in behaviors associated with HIV acquisition. Specifically, verbal harassment, discrimination, and physical assault were associated with discordant condomless anal intercoure in the past 12 months, condomless anal intercourse with a male partner, four or more male sex partners in the past 12 months, and exchanging sex [4]. A disturbing number of MSM in our study reported experiences of attacks or injuries because of their MSM status with nearly 1 in 10 MSM reporting being physically attacked or injured because they were known or perceived to be attracted to men. As such, understanding the drivers of stigma in sexual minorities and racial/ethnic minorities and their relationship to engagement in HIV-related risk behavior will be critical to HIV prevention intervention development at the individual and community levels.

This analysis fills an important research gap and seeks to understand the experiences of Latino MSM relative to white MSM in order to inform culturally responsive interventions that address barriers to testing and engagement in HIV prevention, namely stigma. There were few differences in HIV-related stigma and discrimination outcomes between race/ethnicity and HIV-related perceived stigma; however, our findings can still shape anti-HIV stigma efforts in the local community and also point to serious concerns including violence against MSM in Seattle that will likely perpetuate stigmatizing attitudes and enacted stigma if left unaddressed. Another strength of our study was the completeness of the data. There was a low percentage of missing data (between 0-7%) and the sample sizes were well balanced across cycles.

Our study includes several limitations that should be considered when interpreting our findings. First, our assessment of HIV-related stigma towards PLWH reflect individuals' perception of community attitudes and does not represent individuals' actual behaviors or perceptions. Second, we used two questions regarding HIV prevention education via a one-on-one session with a counselor and a group session in the past year as a proxy measure for HIV prevention education with the logic that if someone who has low or lack of education regarding how HIV is transmitted, this would result in higher frequencies or endorsement of stigma. This is not a complete assessment of what the informational sessions (individual or group) consisted of.

Future studies of Latino MSM should be designed with more specific HIV-related stigma questions that focus on the individual participant's attitude as the measure.

Another key limitation is that we did not analyze data on place of residence. Men were recruited from Seattle-based venues, but may have resided in areas surrounding Seattle as inclusion criteria required residence in King or Snohomish County. Seattle is a fairly progressive city when it comes to HIV prevention and has several goals set in place to normalize same-sex attraction and anti-stigma. In addition, Latinos comprise a higher proportion of the population in the areas surrounding Seattle [25]. The venue based sampling scheme used in our analysis may have introduced bias in that NHBS may have sampled men who are already comfortable attending gay venues (including the 2% who identified as straight but were MSM). Our analysis may have missed those who feel less comfortable frequenting gay-affirming spaces that may also reside in more conservative areas surrounding Seattle where experiences of HIV-related stigma and discrimination may be higher. In general, MSM recruited in NHBS are at higher risk for HIV than MSM in the general population due to the venue-based sampling method. Moreover, if Latino MSM are more likely to report perceived stigma toward PLWH due to internalized homophobia or this internalized homophobia or stigma as one related study [20] suggests and this resulted in MSM avoiding gay affirmative spaces, this could be problematic as one study showed that social engagement and involvement with gay venues were predictors of safer sex practices [26]. There could be important differences in experiences with HIV-related stigma between men who live in Seattle and those who reside in the areas surrounding Seattle (but frequent venues in Seattle proper) and as such we also cannot completely rule out the possibility of misclassification. Future studies should be designed to include Latino MSM outside of Seattle proper and use different sampling schemes to assess if and how the mechanism of internalized homophobia result in both engagement in high risk behaviors behavior and/or lack of testing.

Finally, given that our data are cross-sectional we cannot directly speak to the directionality of the relationship between race/ethnicity and HIV-related stigma or its impact on health seeking behaviors and HIV-related risk behaviors. Future prospective studies are needed to understand how stigma influences health seeking behavior and uptake of HIV prevention

strategies including risk reduction. Such studies should test epidemiological models to examine whether and how stigma inhibits testing and leads to risk across time.

A systematic review of studies using interventions aimed at reducing HIV-related stigma, most based in the United States, effectively improved knowledge about HIV/AIDS, infection control practices, and willingness to treat PLWH [27]. However, in several studies included in the review, the interventions were not successful in reducing fear of infection and were limited due to their very high variability across the interventions tested in terms of type, content, intensity and target population [26]. Future research should measure HIV-related stigma beliefs and test robust, scalable, culturally relevant HIV interventions to impact HIV-related stigma in Latino based communities as culturally relevant spaces have been found to be well positioned to support anti-HIV stigma messages [28-29].

CONCLUSION

In summary, our primary finding was that experiences of discrimination in the last year were common among both white and Latino MSM in the greater Seattle area. Our analysis also suggests that Latino MSM are more likely to perceive HIV-related stigma towards PLWH in Seattle compared to white MSM. These data support the development of targeted anti-stigma interventions that facilitate understanding of root causes of stigma. Incorporating cultural and social context into anti-stigma interventions will be imperative as the drivers of stigma may vary despite the lack of differences in the frequency of stigma between Latino and white MSM. Special consideration of whether or not the HIV-related stigma and discrimination reported by Latino MSM is independent of pre-existing fears, ignorance and misunderstanding about issues such as sexuality, gender, race, ethnicity, culture, and drug use which are often associated with HIV related stigma will be key moving forward. As Latino MSM continue to account for almost 30% of new infections in the U.S. and stand as the second most affected sub-population [5], there is an urgent need to develop and implement interventions to reduce stigma and ensure that Latino MSM can have equitable access to HIV prevention services and maximize opportunities to engage in programs that effectively prevent HIV.

Appendix

Table 1. Demographic Characteristics of Latino and White NHBS Participants in Seattle from MSM Cycle 4 (2014) and MSM Cycle 5 (2017)

	All N=633		MSM 4 N=318		MSM 5 N=315	
	White N = 491	Latino N = 142	White N = 247	Latino N = 71	White N = 244	Latino N = 71
Demographic Characteristics	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Age (years)						
18-34	236 (48%)	99 (70%)	115 (46%)	52 (73%)	121 (50%)	47 (66%)
35+	255 (51%)	43 (30%)	132 (53%)	19 (27%)	123 (50%)	24 (34%)
Education (years)						
4 year college graduate or above	253 (52%)	62 (43%)	121 (49%)	28 (39%)	132 (54%)	32 (45%)
Some post-high school education	156 (32%)	56 (38%)	76 (31%)	25 (35%)	80 (33%)	31 (44%)
High school graduate or equivalent	76 (15%)	22 (15%)	46 (19%)	14 (20%)	30 (12%)	7 (10%)
Less than high school	6 (1%)	6 (4%)	4 (1%)	4 (6%)	2 (1%)	1 (1%)
Income ($)						
<15,000	71 (15%)	21 (15%)	41 (17%)	15 (21%)	30 (12%)	6 (8%)
15,000-34,999	117 (24%)	35 (25%)	62 (25%)	21 (30%)	55 (23%)	14 (20%)
35,000-74,999	145 (30%)	54 (38%)	73 (30%)	23 (32%)	72 (29%)	31 (44%)
≥ 75,000	156 (32%)	32 (23%)	69 (28%)	12 (17%)	87 (36%)	20 (28%)
Missing	--	--	2 (<1%)	--	--	--
Self-reported sexual identity						
Gay	416 (85%)	136 (83%)	209 (86%)	58 (82%)	207 (85%)	63 (89%)
Bisexual	71 (15%)	21 (14%)	34 (14%)	13 (18%)	37 (15%)	8 (11%)
Ever experienced homelessness [a]						

	Yes	39 (8%)	15 (11%)	19 (8%)	12 (17%)	20 (8%)	3 (4%)
	No	452 (92%)	127 (89%)	228 (92%)	59 (83%)	224 (92%)	68 (96%)
Health insurance [b,c]							
	None	60 (12%)	36 (25%)	33 (13%)	21 (30%)	27 (11%)	15 (21%)
	Private	317 (64%)	85 (60%)	154 (62%)	39 (55%)	163 (67%)	46 (65%)
	Public	105 (22%)	21 (15%)	54 (22%)	11 (15%)	51 (21%)	10 (14%)
	Other[1]	9 (2%)	0 (0%)	6 (3%)	0 (0%)	3 (1%)	0 (0%)
In the past 12 months, talked to a counselor about HIV prevention							
	Yes	66 (13%)	33 (23%)	40 (16%)	16 (23%)	26 (11%)	17 (24%)
	No	425 (87%)	109 (77%)	207 (84%)	55 (77%)	218 (89%)	54 (76%)
In the past 12 months, participated in group session to discuss ways to prevent HIV							
	Yes	17 (3%)	7 (5%)	5 (2%)	4 (6%)	12 (5%)	3 (4%)
	No	474 (97%)	135 (95%)	242 (98%)	67 (94%)	232 (95%)	68 (96%)

Abbreviations: Men who have Sex with Men (MSM); National HIV Behavioral Surveillance (NHBS)

[a] "Homeless" was defined as living on the street, shelter, in a car, or in a single-room occupancy hotel in the 12 months

[b] Participants were shown flashcard with the following options: A private health plan-through an employer or purchased directly, Medicaid-for people with low incomes, Medicare- f elderly and people with disabilities, Some other government plan, TRICARE/CHAMPUS, Veterans Administration coverage, Some other health insurance.

[c] No additional information was available for participants who reported "Other" forms of health insurance.

Table 2. Characteristics related to sexual behaviors, discrimination and stigma among Latino and White MSM NHBS Participants in Seattle from MSM Cycle 4 (2014) and MSM Cycle 5 (2017)

	All		MSM 4		MSM 5	
	White N=491	Latino N=142	White N=247	Latino N=71	White N=244	Latino N=71
Sexual Behaviors and HIV related Risk Factors						
Saw health care provider in last 12 months						
Yes	423 (86%)	121 (85%)	210 (85%)	59 (83%)	213 (87%)	62 (87%)
No	68 (14%)	21 (15%)	37 (15%)	12 (17%)	31 (13%)	9 (13%)
Health care provider recommended HIV test	262 (62%)	82 (68%)	111 (53%)	35 (59%)	151 (71%)	47 (76%)
Ever tested for HIV[a]	473 (96%)	141 (99%)	236 (96%)	70 (99%)	237 (97%)	71 (100%)
Tested for HIV in the last 12 months	357 (73%)	113 (80%)	169 (69%)	50 (70%)	188 (77%)	63 (89%)
Any unprotected anal sex with discordant partner [b]	83 (18%)	22 (17%)	30 (12%)	13 (19%)	53 (25%)	9 (14%)
Popper use in the last 12 months[c]	169 (34%)	55 (39%)	79 (32%)	21 (30%)	90 (37%)	34 (48%)
Meth use in the last 12 months [d]	54 (11%)	9 (6%)	24 (10%)	6 (8%)	30 (12%)	3 (4%)
5 or more alcoholic drinks in one sitting/2 hrs	223 (45%)	72 (50%)	85 (34%)	28 (39%)	138 (56%)	44 (61%)
10+ sex partners in the last year [e]	170 (35%)	55 (39%)	74 (30%)	22 (31%)	96 (39%)	33 (46%)
STI diagnosis in the last 12 months[f]	77 (16%)	30 (21%)	31 (13%)	12 (17%)	46 (19%)	18 (25%)
Any elevated risk	304 (65%)	89 (66%)	145 (59%)	41 (59%)	159 (72%)	48 (74%)
Discrimination and Stigma[g]						
Discrimination						
Called names or insulted	180 (37%)	46 (32%)	74 (31%)	23 (32%)	106 (43%)	23 (32%)
Received poorer service[h]	62 (13%)	22 (15%)	23 (9%)	11 (15%)	39 (16%)	11 (15%)
Treated unfairly at work or school	48 (10%)	18 (13%)	30 (12%)	9 (13%)	18 (7%)	9 (13%)
Denied or lower quality healthcare	14 (3%)	1 (1%)	4 (2%)	1 (1%)	10 (4%)	0 (0%)
Physically attacked or injured	37 (8%)	11 (8%)	17 (7%)	8 (11%)	20 (8%)	3 (4%)
Yes to at least one of the above items	219 (45%)	58 (41%)	96 (40%)	29 (41%)	123 (50%)	29 (41%)

Stigma						
Would discriminate against PLWH	135 (28%)	62 (44%)	78 (32%)	32 (45%)	57 (23%)	30 (42%)
Would not support rights of PLWH	40 (8%)	17 (12%)	27 (11%)	8 (11%)	13 (5%)	9 (13%)
Would not be friends with PLWH	33 (7%)	17 (12%)	22 (9%)	13 (18%)	11 (5%)	4 (6%)
PLWH have gotten what they deserve	54 (11%)	19 (13%)	32 (13%)	11 (15%)	22 (9%)	8 (11%)
Agree with any of the above	177 (36%)	72 (51%)	104 (42%)	37 (52%)	73 (30%)	35 (49%)

Abbreviations: National HIV Behavioral Surveillance (NHBS), Men who have Sex with Men (MSM), Person Living with HIV (PLWH), Human Immunodeficiency Virus (HIV)

[a] Among those who did not self-report HIV+

[b,c,d,e,f] In King County, "high-risk MSM" are defined as HIV-uninfected MSM with any: methamphetamine/popper use, 10+ sex partners, non-concordant condomless anal sex, bacterial STI diagnosis in the past year.

[g] "In the last 12 months"

[h] "Service" defined as service in restaurants, stores, other businesses, or agencies.

Table 3. Relationships between Latino ethnicity and HIV related stigma and discrimination among Seattle participants in the NHBS MSM Cycles 4 and 5

HIV Related Stigma Measure*	All		MSM 4		MSM 5	
	IRR (95% CI)	**aIRR* (95% CI)**	**IRR (95% CI)**	**aIRR* (95% CI)**	**IRR (95% CI)**	**aIRR* (95% CI)**
Percieved stigma toward PLWH						
Discriminate against PLWH[1]	1.58 (1.17, 2.14)	1.44 (1.05, 1.96)	1.42 (0.94, 2.14)	1.20 (0.79, 1.84)	1.81 (1.16, 2.81)	1.78 (1.13, 2.80)
Not support rights of PLWH	1.47 (0.83, 2.59)	1.37 (0.76, 2.47)	1.03 (0.47, 2.27)	0.88 (0.39, 1.97)	2.38 (1.02, 5.57)	2.39 (0.99, 5.79)
Not be friends with PLWH	1.78 (0.99, 3.20)	1.81 (0.99, 3.32)	2.05 (1.04, 4.08)	2.04 (1.00, 4.17)	1.25 (0.40, 3.92)	1.35 (0.42, 4.32)
PLWH gotten what they deserve	1.21 (0.72, 2.05)	1.15 (0.67, 1.97)	1.19 (0.60, 2.36)	1.20 (0.60, 2.43)	1.25 (0.56, 2.80)	1.09 (0.48, 2.52)
Any stigma[2]	1.40 (1.07, 1.84)	1.28 (0.97, 1.70)	1.23 (0.84, 1.79)	1.07 (0.73, 1.58)	1.65 (1.10, 2.46)	1.62 (1.07, 2.45)
Enacted HIV related stigma[3]						
Called names or insulted	0.87 (0.63, 1.21)	0.78 (0.56, 1.08)	1.05 (0.66, 1.69)	0.87 (0.54, 1.41)	0.75 (0.48, 1.17)	0.72 (0.46, 1.15)
Received poorer service	1.22 (0.75, 1.98)	1.08 (0.66, 1.78)	1.64 (0.80, 3.36)	1.52 (0.73, 3.18)	0.97 (0.50, 1.89)	0.78 (0.39, 1.56)
Treated unfairly—work or school	1.28 (0.75, 2.21)	1.03 (0.59, 1.80)	1.02 (0.49, 2.15)	0.78 (0.36, 1.67)	1.72 (0.77, 3.83)	1.52 (0.66, 3.50)
Denied or lower quality healthcare[4]	0.24 (0.03, 1.86)	0.26 (0.03, 2.05)	0.85 (0.10, 7.62)	0.91 (0.09, 8.54)	--	--
Physically attacked or injured	1.01 (0.52, 1.99)	0.87 (0.44, 1.74)	1.60 (0.69, 3.70)	1.36 (0.57, 3.27)	0.52 (0.15, 1.73)	0.45 (0.13, 1.53)
Yes to at least one discrimination	0.90 (0.68, 1.20)	0.81 (0.60, 1.08)	1.02 (0.67, 1.55)	0.88 (0.58, 1.34)	0.81 (0.54, 1.21)	0.76 (0.50, 1.16)

[1]Adjusted for age, education, household income, and HIV prevention knowledge in either one one one sessions, a counselor, or in a group session in the last 12 months.
[2]Any stigma includes participants who agreed with at least one of the Perceived Stigma toward PLWH measures
[3]Different skip patterns in different survey years. 2014 (MSM 4)—only those who identified as gay or bisexual were asked. 2017 (MSM 5) everyone was asked.
[4]Model did not converge

Table 4. Perceived Stigma toward PLWH related questions, King or Snohomish County

Questionnaire Item
Most people in King or Snohomish County would…
Discriminate against someone with HIV. Do you...
Support the rights of a person with HIV to live and work wherever they wanted to. Do you...
Not be friends with someone with HIV. Do you...
Think that people who got HIV through sex or drug use have gotten what they deserve. Do you…

Note: Items were coded as "Agreed" if responses were 1 (*agree*) or 2 (*strongly agree*) and were coded as "Disagreed" if responses were 4 (disagree) or 5 (strongly disagree).

Table 5. HIV related stigma (discrimination) questions, King or Snohomish County

Questionnaire Item
During the past 12 months, have any of the following things happened to you because someone knew or assumed you were attracted to men?…
You were called names or insulted
You received poorer service than other people in restaurants, stores, other businesses, or agencies
You were treated unfairly at work or school
You were denied or given lower quality health care
You were physically attacked or injured

Note: Items were coded as 0 "No, and 1 "Yes"

References

1. Arnold, E. A., Rebchook, G. M., & Kegeles, S. M. (2014). 'Triply cursed': racism, homophobia and HIV-related stigma are barriers to regular HIV testing, treatment adherence and disclosure among young Black gay men. *Culture, health & sexuality*, *16*(6), 710-722.
2. Fortenberry JD, McFarlane M, Bleakley A, et al. Relationships of stigma and shame to gonorrhea and HIV screening. Am J Public Health 2002;92:378–381.
3. Vanable, P. A., Carey, M. P., Blair, D. C., & Littlewood, R. A. (2006). Impact of HIV-related stigma on health behaviors and psychological adjustment among HIV-positive men and women. *AIDS and Behavior*, *10*(5), 473-482
4. Balaji, Alexandra & E Bowles, Kristina & Hess, Kristen & C Smith, Justin & Paz-Bailey, Gabriela. (2016). Association Between Enacted Stigma and HIV-Related Risk Behavior Among MSM, National HIV Behavioral Surveillance System, 2011. AIDS and behavior. 21. 10.1007/s10461-016-1599-z.
5. Centers for Disease Control and Prevention. HIV and Hispanics/Latinos, GA: Centers for Disease Control and Prevention; 2018 [https://www.cdc.gov/hiv/group/racialethnic/hispaniclatinos/index.html
6. HIV/AIDS Epidemiology Unit, Public Health – Seattle & King County and the Infectious Disease Assessment Unit, Washington State Department of Health. HIV/AIDS Epidemiology Report 2018, Volume 87.
7. Solorio, R., Forehand, M., & Simoni, J. (2013). Attitudes towards and beliefs about HIV testing among Latino immigrant MSM: a comparison of testers and nontesters. *AIDS Research and Treatment*, *2013*.
8. MacKellar DA, Gallagher KM, Finlayson T, Sanchez T, Lansky A, Sullivan PS. Surveillance of HIV risk and prevention behaviors of men who have sex with men—a national application of venue-based, time-space sampling. Public Health Rep. 2007;122(Suppl 1):39-47.
9. Gallagher KM, Sullivan PS, Lansky A, Onorato IM. Behavioral surveillance among people at risk for HIV infection in the US: the National Behavioral Surveillance System. Public Health Rep. 2007;122(suppl 1):32-38.
10. Centers for Disease Control and Prevention. Human Immunodeficiency virus (HIV) risk, prevention, and testing behaviors—United States, National Behavioral Surveillance System: men who have sex with men, November 2005–April 2005. MMWR Surveill Summ. 2006;55(6):1-16.
11. Herek GM, Capitanio JP, Widaman KF. HIV-related stigma and knowledge in the United States: Prevalence and trends, 1991–1999. Am J Public Health 2002;92(3):371–377. [PubMed: 11867313].
12. Kalichman, Seth C., Leickness C. Simbayi, Sean Jooste, Yoesrie Toefy, Demetria Cain, Chauncey Cherry, and Ashraf Kagee. "Development of a brief scale to measure AIDS-related stigma in South Africa." *AIDS and Behavior* 9, no. 2 (2005): 135-143.
13. Diaz, R.M.. (2006). In our own backyard: HIV/AIDS stigmatization in the Latino gay community. San Francisco: University of California
14. Díaz, R. M., Ayala, G., & Bein, E. (2004). Sexual risk as an outcome of social oppression: Data from a probability sample of Latino gay men in three U.S. cities. *Cultural Diversity and Ethnic Minority Psychology, 10*(3), 255-267. http://dx.doi.org/10.1037/1099-9809.10.3.255
15. Bogart, L. M., Landrine, H., Galvan, F. H., Wagner, G. J., & Klein, D. J. (2013). Perceived discrimination and physical health among HIV-positive Black and Latino men who have sex with men. *AIDS and behavior*, *17*(4), 1431–1441. doi:10.1007/s10461-012-0397-5
16. Vega, W.A., Rodriguez, M.A., & Gruskin, E. (2009). Health disparities in the Latino population. *Epidemiological Review 31*(1), 99-112
17. Frye, V., Nandi, V., Egan, J., Cerda, M., Greene, E., Van Tieu, H., … Koblin, B. A. (2015). Sexual orientation- and race-based discrimination and sexual HIV risk behavior among urban MSM. *AIDS and behavior*, *19*(2), 257–269. doi:10.1007/s10461-014-0937-2

18. Bedoya, C. A., Mimiaga, M. J., Beauchamp, G., Donnell, D., Mayer, K. H., & Safren, S. A. (2012). Predictors of HIV transmission risk behavior and seroconversion among Latino men who have sex with men in Project EXPLORE. *AIDS and behavior*, *16*(3), 608–617. doi:10.1007/s10461-011-9911-4
19. Fernandez MI, Jacobs RJ, Warren JC, et al. Drug use and Hispanic men who have sex with men in South Florida: implications for intervention development. AIDS Educ Prev. 2009;21(5 Suppl):45–60.
20. Ramirez-Valles, J., Molina, Y., & Dirkes, J. (2013). Stigma towards PLWHA: the role of internalized homosexual stigma in Latino gay/bisexual male and transgender communities. *AIDS education and prevention : official publication of the International Society for AIDS Education*, *25*(3), 179–189. doi:10.1521/aeap.2013.25.3.179
21. Gonzalez, J. S., Hendriksen, E. S., Collins, E. M., Durán, R. E., & Safren, S. A. (2009). Latinos and HIV/AIDS: examining factors related to disparity and identifying opportunities for psychosocial intervention research. *AIDS and Behavior*, *13*(3), 582.
22. Grant Z, Dailey A, Hu X, Johnson AS. HIV Care Outcomes Among Hispanics or Latinos with Diagnosed HIV Infection — United States, 2015. MMWR Morb Mortal Wkly Rep 2017;66:1065–1072. DOI: http://dx.doi.org/10.15585/mmwr.mm6640a2
23. Smit, P. J., Brady, M., Carter, M., Fernandes, R., Lamore, L., Meulbroek, M., … Thompson, M. (2011). HIV-related stigma within communities of gay men: a literature review. *AIDS care*, *24*(4), 405–412. doi:10.1080/09540121.2011.613910
24. Brooks, R. A., Etzel, M. A., Hinojos, E., Henry, C. L., & Perez, M. (2005). Preventing HIV among Latino and African American gay and bisexual men in a context of HIV-related stigma, discrimination, and homophobia: perspectives of providers. *AIDS patient care and STDs*, *19*(11), 737–744. doi:10.1089/apc.2005.19.737
25. US Census Bureau. (2018, September 4). *Race and Ethnicity in King County, Washington*. Retrieved from https://statisticalatlas.com/county/Washington/King-County/Race-and-Ethnicity
26. Kippax, S., Connell, R., Dowsett, G., and Crawford, J. (1993)*Sustaining Safe Sex: Gay Communities respond to AIDS*. The Falmer Press, London.
27. Brown, L., Macintyre, K., & Trujillo, L. (2003). Interventions to reduce HIV/AIDS stigma: what have we learned?. *AIDS education and prevention*, *15*(1), 49-69.
28. Berkley-Patton, J. Y., Moore, E., Berman, M., Simon, S. D., Thompson, C. B., Schleicher, T., & Hawes, S. M. (2013). Assessment of HIV-related stigma in a US faith-based HIV education and testing intervention. *Journal of the International AIDS Society*,*16*, 18644.
29. Derose, K. P., Bogart, L. M., Kanouse, D. E., Felton, A., Collins, D. O., Mata, M. A., … Williams, M. V. (2014). An intervention to reduce HIV-related stigma in partnership with African American and Latino churches. *AIDS education and prevention : official publication of the International Society for AIDS Education*, *26*(1), 28–42. doi:10.1521/aeap.2014.26.1.28