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HIV Testing Correlates: U.S. and Foreign Born High-Risk Black Heterosexual Men

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Abstract

In the U.S., Black men are disproportionately affected by HIV, with some of the highest HIV incidence rates and lowest rates of HIV testing. We examined correlates of HIV testing and knowledge among participants of the Barbershop Talk with Brothers (BTWB) project, a community-based intervention. Specifically, we examined differences between U.S. vs. foreign-born status and HIV testing rates, HIV knowledge, and socio-demographic factors. Of the 855 men included, the mean age was 33 years and 35.0% of men were foreign-born. Lifetime HIV testing was reported at 84%, with greater proportion of U.S. vs foreign-born men reporting lifetime (88.6% vs. 75.0%) and recent testing (68.6% vs. 51.0%), $p < 0.001$. Among foreign-born men, recent HIV testing was associated with lower stigma and greater HIV transmission knowledge than those un-tested. The authors recommend tailored approaches to increasing HIV testing in Black communities, based on nativity and social factors.

Keywords

HIV testing; Heterosexual black men; U.S. and foreign born; Community-based

Introduction

HIV testing and diagnosis is a foundational step to ending the HIV epidemic globally. Agencies worldwide, and within the United States (US), have set goals for 2020, to diagnose 90% of all HI positive persons [1]. Despite government investments to promote HIV testing, racial, regional, and other disparities have diagnosis rates high and largely unchanged over the last 5 years [2]. Black, heterosexual men in the US are disproportionately affected by HIV/AIDS [3]. In 2018, 39.0% of new diagnoses in the U.S. were among Black men, which is eight times as high as the rate among white men [2]. In 2016, it was estimated that 85.0% of Black individuals living with HIV knew their serostatus compared to 89.0% among their White counterparts [4]. Furthermore, 69.0% of Black heterosexual men have ever been tested for HIV [5], and 35.0% of Black heterosexual men and 34.0% of high risk Black heterosexual men have received an HIV test in the past year [6, 7]

Socio-demographic factors, including nativity, play a role in HIV testing among Black heterosexual men. Low socioeconomic status and educational attainment are consistently associated with lower testing rates [8]. However, predictors of HIV testing differ by ethnicity (Hispanic versus non-Hispanic) among immigrant populations compared to the general population [9]. At-risk non-Hispanic Black immigrants were more likely to test for HIV compared to their White Hispanic immigrant counterparts [9]. Further, White Hispanic immigrants had the lowest rates of intending to get an HIV test, with non-Hispanic Black and Hispanic Black immigrants reporting comparable rates of HIV testing intention [9].

Beyond gaps in testing among Black men, there is heterogeneity in testing and diagnosis rates within Black populations as a function of immigration status [3, 10, 11]. Compared to U.S. born Black individuals, foreign born Black individuals have a higher HIV diagnosis rate. Across the US, approximately 16.0% of new HIV infections are among foreign-born. Thirty-nine percent of foreign born diagnoses are attributable to heterosexual behavior while only 27.0% among US born persons [12]. Foreign-born Blacks are less likely to be screened than are those born in the U.S., and more likely to be diagnosed late in the course of infection [9, 13], and are less likely to be virally suppressed than U.S.-born Blacks. However, differences in HIV viral suppression are not evident once individuals are diagnosed and brought into medical care [14–16]

Individual-level risk factors such as lower HIV knowledge (transmission factors, prevention methods, and HIV testing modalities), lower HIV risk perception, fear of positive test results, and lack of preventive behavior are associated with non-testing in Black men [6, 7, 17]. Previous research has found HIV knowledge may play a greater role in HIV testing among foreign born men and women since HIV knowledge is significantly lower compared to that of the U.S. born [3]. Studies by the Brooklyn Community Action Project identified several factors associated with recent HIV testing among a sample of men and women identified as high-risk heterosexuals. Among men, recent HIV testing was associated with

peer norms supporting testing, HIV testing access, STI testing, lifetime (but not recent) incarceration, and substance use treatments [18, 19].

However, few studies directly address predictors for testing among high risk Black heterosexual men.

The current analysis aims to describe differences in 12-month HIV testing between US and foreign-born Black men in Brooklyn, New York. Further we aim to describe socio-demographic factors associated with the differences in HIV testing.

Methods

The Barbershop Talk with Brothers (BTWB) project was a cluster-randomized, HIV prevention program aimed at improving the health of Black heterosexual men who are at high-risk for HIV infection in Brooklyn [20]. The BTWB project tested an intervention where barbershop owners and managers were used to disseminate information about the importance of HIV testing to shop patrons. HIV testing data from the baseline administration of the intervention were used in the current analysis [21].

BTWB was a community-academic collaboration between the Ashe Institute of Urban Health, Inc., the State University of New York Downstate Health Science University, the Brooklyn Health Disparities Center, and a steering committee consisting of barbers, barbershop owners and managers, and members of the priority population anticipated to be served by the project [21–23]. The BTWB team partnered with fifty-three barbershops situated geographically within high-risk areas for heterosexually acquired HIV. We identified high risk-areas based on high poverty and diagnosis rates for HIV attributable to heterosexual activity [21]. In the Brooklyn catchment area of interest for this intervention, between 22.0 and 28.0% of incident cases were attributed to heterosexual risk, and of these incident cases, concurrent AIDS diagnoses ranged from 28.0 to 32.0% [24].

Study Participants

Participants were screened at participating barbershops using a structured set of questions administered via an audio-computer assisted self-interview, with a privacy screen and headphones utilized to ensure confidentiality of data collection. Trained study staff administered the screening interview and obtained written informed consent from all eligible men who agreed to participate. Men 18 years and over who identified primarily as Black or African American were eligible for BTWB participation if they reported having unprotected sex in the past 3 months and having had at least two female sexual partners during that time.

Of 4119 men screened between November 2012 and July 2016, 1222 (29.0%) were eligible for the BTWB program. Of the eligible men, 876 (71.7%) consented to participate and completed a baseline assessment prior to intervention activities. Of the 876, 21 men were removed from the analytic dataset who reported a baseline HIV-positive serostatus. This analysis is based on a final sample of 855 men.

Baseline Assessment

A baseline assessment was administered by trained study staff at either a BTWB barbershop or at a partner site. The assessment was delivered using an audio-computer assisted self-interview. Prior to administering the interview, staff presented an orientation regarding use of the computerized interview and maintained presence throughout the interview should technical issues arise. On average the interview completion time was 41 min. Participants were provided remuneration of 20 dollars for their participation in the assessment component of the project. The Institutional Review Board at the State University of New York Downstate Health Science University approved all program activities.

Measures of Interest

HIV Testing

HIV testing was considered the outcome of interest in the present analysis. All study participants were asked whether they had ever received an HIV test, with participants who reported ever receiving an HIV test also being asked if they had received an HIV test within the past 12 months.

HIV Conspiracy Beliefs

HIV conspiracy beliefs were examined using previous measures of this concept [25], adapted to our population based on formative evaluation assessments. We included seven conspiracy beliefs including (1) HIV is a man-made virus; and (2) AIDS was produced in a government laboratory. For each item, respondents stated agreement based on a 5-point Likert response options ranging from *strongly disagree* to *strongly agree*. Endorsement of these HIV conspiracy beliefs have been associated in previous studies with decreased adherence to HIV antiretroviral therapy [26], and greater sexual risk behavior [27], but with mixed findings regarding likelihood of HIV testing [28]. The seven scores were summed to create a single composite variable, with higher scores reflecting a greater level conspiracy-related beliefs (Cronbach's $\alpha = .70$).

HIV Stigma

HIV stigma toward people living with HIV was assessed through 11 items focused on personal perceptions and reactions toward people living with HIV and stigma attributed to HIV in the community (e.g., Getting HIV is a punishment for bad behavior; People with HIV have only themselves to blame; I would not like to be friends with someone with HIV) [29]. Likert responses were included for each item, ranging from *strongly disagree* to *strongly agree*. A higher composite score indicated greater HIV stigma (Cronbach's $\alpha = .70$).

HIV Transmission Knowledge and Perceived Susceptibility

A set of 13 questions assessed HIV transmission knowledge. The 7 items (1) Pulling out the penis before a man climaxes or cums keeps a woman from getting HIV during sex; (2) A woman cannot get HIV if she has anal sex with a man; (3) Showering, or washing ones' genitals or private parts, after sex keeps a person from getting HIV; (4) A woman

cannot get HIV if she has sex during her period; (5) A natural skin condom works better against HIV than does a latex condom; (6) Having sex with more than one partner can increase a persons' chance of being infected with HIV; and (7) Using Vaseline or baby oil with condoms lowers the chance of getting HIV) were originally adapted from the HIV Knowledge Questionnaire (18-item version) (HIV-K-Q 18) [30]; we removed eleven items from the tool where knowledge exceeded 95.0% in our pilot work, and supplemented with the following questions derived from our formative work: If a man only has anal sex with a woman he is not going to get HIV; homosexuals, bisexuals, and drug addicts are the only people who get HIV/AIDS in my neighborhood; you can tell if a woman has HIV by looking at her; having another sexually transmitted disease like Chlamydia can increase your chances of getting HIV; if you are a man with HIV, then that means that you have probably had sex with other men; a man is not at risk for HIV if he only has unprotected sex during a 'quickie'). Each item was recorded as 1 = correct or 0 = incorrect. A composite variable was calculated by summing the number of correct responses (Cronbach's alpha = .70). Perceived HIV susceptibility was measured with two items (People like me do not get HIV infections; My body can fight of an HIV infection) and assessed with Likert responses ranging from strongly disagree to strongly agree. The two items were summed, with a higher score indicating higher perceived HIV susceptibility (Cronbach's alpha = .70).

Substance Use

Substance use frequency measures were captured to assess drug and alcohol use over the past 3 months, with separate questions on marijuana and hashish use versus other non-prescribed drugs. Given the baseline distribution of these variables, these variables were dichotomized (no use over past 3 months/at least some use).

Socio-demographic Factors

Participant age, country of birth, highest education level completed (high school or equivalent/did not complete high school), current employment status (currently working full or part time/not working), housing stability (more stable housing/less stable housing [e.g., homeless, transitional or temporary housing, residential facility, on street]), foreign-born men and identified socio-demographic factors associated with differences in testing. And criminal justice involvement (lifetime experience of having spent at least a night in prison or jail/no criminal justice involvement) were assessed [31]. Income was measured through the following question 'What was your personal income last year from all sources before taxes?'. Annual income was assessed as a dichotomous variable (less than 10 K/year; 10 K or higher/year).

Statistical Analysis

Descriptive statistics were used to examine all variables included in the analysis. Crude odds ratios and associated 95% confidence intervals were computed for dichotomous study characteristics to determine the odds of recent HIV testing. For continuous study characteristics, an independent-samples t-test was performed to explore differences between men who did and did not complete a recent HIV test. To assess differences between U.S. versus foreign-born men, results were stratified by country of birth. Factors that were

statistically significant at the 0.10 alpha level in bivariate analyses were entered into the regression analysis.

A multivariable logistic regression was performed to identify factors that were significantly associated with the odds of recent HIV testing, after adjustment. Nativity status was entered in the model as a dichotomous predictor and also examined for its potential moderating effects through interaction terms with HIV stigma and HIV knowledge. All analyses were performed using IBM SPSS Statistics for Windows, Version 26 (IBM Corp., Armonk, N.Y., USA) with statistical significance indicated with $\alpha < 0.05$.

Results

The mean age was 33 years (SD = 11 years) and the majority were non-Hispanic Black (88.0%; Black Hispanics made up the remaining 12%). Thirty-five percent of men were born outside of the U.S.; most were from Haiti, Jamaica, Trinidad and Tobago, or Guyana. Seventy-six percent of participants had at least a high school education, 50.0% were currently employed, and 66.0% had some type of health insurance. In addition, the majority had spent at least one night in jail or prison (52.0%), lived in stable housing (76.0%), and reported alcohol use in the past 3 months (76%). Lifetime testing was reported by 84.0%, and testing within the past year by 63.0% of men (Table 1).

A greater proportion of U.S. versus foreign born men reported lifetime (88.6% vs. 75.0%) and recent testing (68.6% vs. 51.0%), $p < 0.001$ for both comparisons (data not shown). Table 2 presents unadjusted correlates of recent HIV testing as a function of nativity status. Among U.S. born men, those reporting recent HIV testing were older, had less stigma, and greater HIV transmission knowledge than foreign born men. An increase in the odds of recent HIV testing was associated with currently having health insurance and having ever spent at least one night in jail or prison; whereas a decrease in the odds of recent HIV testing was found for those living in stable housing. Among foreign born men, those reporting recent HIV testing had less stigma and greater HIV transmission knowledge than US born men. An increase in the odds of recent HIV testing was associated with having at least a high school education, an income of at least \$10,000, having ever spent at least one night in jail or prison, recent alcohol use, and recent marijuana use. A decrease in the odds of recent HIV testing was associated with being a full or part-time student and engaging in recent illicit substance use.

Results from the multivariable logistic regression model are presented in Table 3. Nativity status was not significantly related to recent testing (OR 1.28; 95% CI 0.87, 1.86). However, completed high school (OR 1.57; 95% CI 1.03, 2.37), currently has health insurance (OR = 1.43; 95% CI 1.01, 2.02), and ever spent at least one night in jail or prison (OR 1.87; 95% CI 1.27, 2.74) were each associated with increased odds in recent HIV testing. Has stable housing (OR 0.53; 95% CI .33, 0.85) was associated with decreased odds in recent testing. There were no statistically significant interactions detected between nativity status and either HIV-related stigma or HIV transmission knowledge ($p > 0.05$ for both, data not shown).

Discussion

The present study found US-born Black men were significantly more likely to have been tested for HIV than foreign-born Black men. The majority of the participants had been tested for HIV but less than two-thirds had received testing within the last year. In this high-risk sample, HIV testing guidelines were not met, indicating a need for further health promotion within this population.

The correlates of HIV testing varied between US and foreign-born men in our study, such that US-born men having higher average HIV knowledge and lower HIV stigma. However, among foreign-born men, odds of HIV testing were associated with higher HIV knowledge and lower stigma compared to foreign-born men who did not test for HIV. These findings support previous findings that a one-size-fits-all approach to HIV interventions may not be as successful as interventions tailored to specific factors within populations and communities [32–34]. Studies have supported the idea that foreign-born persons to have different risk and health behaviors than those born in the US [13]. Previously, research has found that being foreign-born may have a protective effect against many health risk factors [35, 36]. However, many risk factors are known to increase the longer a person resides in the US or become expounded for first-generation Americans [37–39].

The factors associated with HIV testing within each nativity group should be integrated into intervention design. For example, among US born men having health insurance was associated with higher rates of HIV testing, demonstrating that access to health care services is essential to ensuring testing. Free or low-cost HIV testing should be promoted among populations with lower rates of health insurance [40]. Alternately, among foreign-born men alcohol use within the last 3 months was predictive of HIV testing, a finding that aligns with previous research linking alcohol use among Black heterosexual men with risky sexy behaviors [41]. This suggests that testing should be offered in settings where alcohol users may be present such as alcohol use treatment programs, or be offered in mobile vans that are embedded in the community, to reach persons who may be marginalized from traditional health care settings.

Having a High School or higher-level education retained its protective association for the foreign-born Black men in the sample. Conversely, having insurance or lack of stable housing retained its protective factors only for Native born Black men. These differences highlight heterogeneities within a group that is often treated as a cohesive unit. Understanding the respective needs of native and foreign born at-risk, Black heterosexual men can better inform the development of interventions to increase testing in these groups [42].

We suggest that HIV prevention work, including promotion of HIV testing, be increasingly embedded in existent community organizations to increase testing rates among those who don't have health insurance, may not be seeking care in clinical facilities, as well as use alcohol or illicit substances [43]. Leveraging existing community organizations have the potential to reach high-risk populations, including immigrants, who may not seek health education in traditional healthcare settings.

Limitations and Future Directions

Our study is subject to a number of limitations due to the study design. The sampling method, based on strategic targeting of barbershops in Brooklyn, NY may have resulted in a sample highly specific to the targeted community and results may not be generalizable to other populations of Black, heterosexual men. Additionally, the men targeted for the BTWB intervention were intentionally selected for higher HIV risk behaviors and therefore may not reflect HIV testing patterns among the larger population of Black men in this community.

Conclusion

Factors associated with HIV testing among Black heterosexual, men who are at risk for HIV vary by nativity. Community-based interventions should consider a range of risk and structural factors including housing in developing targeted, culturally competent interventions for the Black heterosexual, population. Ensuring that basic needs are met will help facilitate HIV testing and promote general wellbeing in this population. Furthermore, increased access to free or affordable healthcare resources are also needed to encourage HIV testing. Lastly, incorporating testing promotion into existing alcohol treatment programs can also prove beneficial to increasing testing rates. These data may also be used to inform the unique needs of the foreign-born men to boost HIV prevention work in their home countries.

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References

1. Joint United Nations Programme on HIV/AIDS (UNAIDS). 90–90–90: an ambitious treatment target to help end the AIDS epidemic. UNAIDS Report; 2014. p. 1–33.
2. Centers for Disease Control and Prevention. Diagnoses of HIV Infection in the United States and dependent areas, 2018 (preliminary). HIV Surveill Rep. 2019;30:1–129.
3. Ojikutu B, et al. All black people are not alike: differences in HIV testing patterns, knowledge, and experience of stigma between U.S.-born and non-U.S.-born blacks in Massachusetts. AIDS Patient Care STDS. 2013;27(1):45–54. [PubMed: 23259482]
4. Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2010–2016. HIV Surveill Suppl Rep. 2019;24(1).
5. Conserve DF, et al. Correlates of never testing for HIV among non-Hispanic Black men in the United States: National Survey of Family Growth, 2011–2013. AIDS Behav. 2016;21:492–500.
6. Sionean C, et al. HIV risk, prevention, and testing behaviors among heterosexuals at increased risk for HIV infection—National HIV Behavioral Surveillance System, 21 U.S. cities, 2010. MMWR Surveill Summ. 2014;63(14):1–39.
7. Kwan CK, et al. HIV testing among men at risk for acquiring HIV infection before and after the 2006 CDC recommendations. Public Health Rep. 2016;131(2):311–9. [PubMed: 26957666]
8. Ojikutu B, et al. Barriers to HIV testing in Black immigrants to the U.S. J Health Care Poor Underserved. 2014;25(3):1052–66. [PubMed: 25130224]
9. Ojikutu BO, et al. HIV testing among Black and Hispanic immigrants in the United States. AIDS Patient Care STDS. 2016;30(7):307–14. [PubMed: 27410494]

10. Wiewel EW, et al. Foreign-born persons diagnosed with HIV: where are they from and where were they infected? *AIDS Behav.* 2015;19(5):890–8. [PubMed: 25524308]
11. Blanas DA, et al. HIV/AIDS among African-born residents in the United States. *J Immigr Minor Health.* 2013;15(4):718–24. [PubMed: 22821074]
12. Prosser AT, Tang T, Hall HI. HIV in persons born outside the United States, 2007–2010. *JAMA.* 2012;308(6):601–7. [PubMed: 22820630]
13. Johnson AS, Hu X, Dean HD. Epidemiologic differences between native-born and foreign-born black people diagnosed with HIV infection in 33 U.S. states, 2001–2007. *Public Health Rep.* 2010;125(Suppl 4):61–9.
14. Cyrus E, et al. Disparity in retention in care and viral suppression for Black Caribbean-born immigrants living with HIV in Florida. *Int J Environ Res Public Health.* 2017;14(3):285. [PubMed: 28282947]
15. Myers TR, Lin X, Skarbinski J. Antiretroviral therapy and viral suppression among foreign-born HIV-infected persons receiving medical care in the United States: a complex sample, cross-sectional survey. *Medicine (Baltimore).* 2016;95(11):e3051. [PubMed: 26986128]
16. Crawford T, et al. Foreign born status and HIV/AIDS: a comparative analysis of HIV/AIDS characteristics among foreign and U.S. born individuals. *J Immigr Minor Health.* 2012;14(1):82–8. [PubMed: 21327966]
17. Doshi KR, et al. Health care and HIV testing experiences among black men in the south: implications for “Seek, Test, Treat, and Retain” HIV prevention strategies. *AIDS Patient Care STDs.* 2013;27(2):123–33. [PubMed: 23268586]
18. Gwadz M, et al. Factors associated with recent HIV testing among heterosexuals at high risk for HIV infection in New York City. *Front Public Health.* 2016;4:76. [PubMed: 27200330]
19. Gwadz M, et al. Exploring factors associated with recent HIV testing among heterosexuals at high risk for HIV infection recruited with venue-based sampling. *J AIDS Clin Res.* 2016;7(2):544. [PubMed: 27104046]
20. Wilson TE, et al. Barbershop talk with brothers: using community-based participatory research to develop and pilot test a program to reduce HIV risk among black heterosexual men. *AIDS Educ Prev.* 2014;26(5):383–97. [PubMed: 25299804]
21. Wilson TE, et al. HIV prevention for Black heterosexual men: the barbershop talk with brothers cluster randomized trial. *Am J Public Health.* 2019. 10.2105/AJPH.2019.305121 .
22. Dill LJ, et al. Adjournment in community HIV prevention: exploring transitions in community-academic partnerships. *Health Promot Pract.* 2019. 10.1177/1524839919839361 .
23. Gousse Y, et al. Lessons learned from the implementation of a shared community-academic HIV prevention intervention. *Prog Community Health Partnersh.* 2019;12(4):451–61.
24. HIV Epidemiology and Field Services Program, New York City HIV/AIDS Annual Surveillance Reports, 2014, New York City Department of Health and Mental Hygiene. 2015.
25. Bogart LM, Thorburn S. Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? *J Acquir Immune Deic Syndr.* 2005;38(2):213–8.
26. Bogart LM, et al. Conspiracy beliefs about HIV are related to antiretroviral treatment nonadherence among African American men with HIV. *J Acquir Immune Deic Syndr.* 2010;53(5):648–55.
27. Bogart LM, et al. Longitudinal association of HIV conspiracy beliefs with sexual risk among black males living with HIV. *AIDS Behav.* 2011;15(6):1180–6. [PubMed: 20734227]
28. Evangelini M, Pady K, Wroe AL. Which psychological factors are related to HIV testing? A quantitative systematic review of global studies. *AIDS Behav.* 2016;20(4):880–918. [PubMed: 26566783]
29. Visser MJ, et al. Development of parallel scales to measure HIV-related stigma. *AIDS Behav.* 2008;12(5):759–71. [PubMed: 18266101]
30. Carey MP, Schroder KE. Development and psychometric evaluation of the brief HIV Knowledge Questionnaire. *AIDS Educ Prev.* 2002;14(2):172–82. [PubMed: 12000234]
31. Epperson MW, et al. Examining the temporal relationship between criminal justice involvement and sexual risk behaviors among drug-involved men. *J Urban Health.* 2010;87(2):324–36. [PubMed: 20143270]

32. Horvath KJ, Bauermeister JA. eHealth literacy and intervention tailoring impacts the acceptability of a HIV/STI testing intervention and sexual decision making among young gay and bisexual men. *AIDS Educ Prev.* 2017;29(1):14–23. [PubMed: 28195779]
33. Wilson D, Taafe J. Tailoring the local HIV/AIDS response to local HIV/AIDS epidemics, in disease control priorities, third edition (volume 6): major infectious diseases. 2017. p. 157–78.
34. Kuhns LM, et al. Project LifeSkills—a randomized controlled efficacy trial of a culturally tailored, empowerment-based, and group-delivered HIV prevention intervention for young transgender women: study protocol. *BMC Public Health.* 2017;17(1):713. [PubMed: 28915919]
35. Gousse Y, et al. Examining the associations between immigration status and perceived stress among HIV-infected and uninfected women. *J Community Health.* 2018;43(6):1172–81. [PubMed: 29926272]
36. Singh GK, Siahpush M. Ethnic-immigrant differentials in health behaviors, morbidity, and cause-specific mortality in the United States: an analysis of two national data bases. *Hum Biol.* 2002;74(1):83–109. [PubMed: 11931581]
37. Gundersen DA, et al. Heterogeneity in past year cigarette smoking quit attempts among Latinos. *J Environ Public Health.* 2012;2012:1–9.
38. Abraído-Lanza AF, Chao MT, Flórez KR. Do healthy behaviors decline with greater acculturation?: Implications for the Latino mortality paradox. *Soc Sci Med.* 2005;61(6):1243–55. [PubMed: 15970234]
39. Lassetter JH, Callister LC. The impact of migration on the health of voluntary migrants in western societies: a review of the literature. *J Assoc Nurses AIDS Care Transcult Nurs.* 2009;20(1):93–104.
40. Gai Y, Marthinsen J. Medicaid expansion, HIV testing, and HIV-related risk behaviors in the United States, 2010–2017. *AJPH.* 2019;109(10):1404–13.
41. Bowleg L, et al. Neighborhood context and black heterosexual men’s sexual HIV risk behaviors. *AIDS Behav.* 2014;18:2207–18. [PubMed: 24906531]
42. Gwadz M, et al. Factors associated with recent HIV testing among heterosexuals at high risk for HIV infection in New York City. *Front Public Health.* 2016;4(76).
43. MacQueen KM, et al. HIV Testing experience and risk behavior among sexually active black young adults: a CBPR-based study using respondent-driven sampling in Durham, North Carolina. *Am J Community Psychol.* 2015;55:433–43. [PubMed: 25893817]

Table 1

Baseline participant characteristics, BTWB (n = 855)

Characteristic	N (%)
Black, non-Hispanic (missing, n = 37)	749 (87.6)
Born in the United States	555 (64.9)
High school or equivalent (missing, n = 6)	652 (76.3)
Income 10 K or higher (missing, n = 89)	305 (35.7)
Currently employed (missing, n = 5)	430 (50.3)
Has health insurance (missing, n = 12)	566 (66.2)
Lives with a sexual partner (missing, n = 5)	164 (19.2)
Currently a full or part time student (missing, n = 4)	171 (31.7)
Ever spent a night in jail (missing, n = 3)	443 (51.8)
Stable housing (missing, n = 6)	648 (75.8)
Alcohol use, past 3 months (missing, n = 1)	649 (75.9)
Marijuana use, past 3 months (missing, n = 3)	410 (48.0)
Illicit substance use, past 3 months (missing, n = 3)	113 (13.2)
Ever tested for HIV	717 (83.9)
Tested for HIV past year	534 (62.5)
Age (SD) (missing, n = 9)	33.02 (11.3)
HIV conspiracy beliefs (SD) (missing, n = 32)	17.95 (6.4)
HIV stigma (SD) (missing, n = 22)	23.3 (9.0)
HIV transmission knowledge (SD) (missing, n = 22)	10.7 (2.6)

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Table 2

Crude correlates of 12-month HIV testing by nativity status, BTWB

Characteristic	U.S. Born				Foreign born			
	N	%	OR	95% CI	N	%	OR	95% CI
Black, non-Hispanic	325	68.9	0.91	(0.49, 1.68)	145	52.3	2.75	(0.84, 8.97)
	39	70.9	1.00	–	4	28.6	1.00	–
High school or equivalent	295	69.2	1.1	(0.72, 1.68)	125	55.3	2.18	(1.25, 3.80)
	86	67.2	1.00	–	25	36.2	1.00	–
Income 10 K or higher	140	66.0	0.77	(0.52, 1.12)	56	60.2	1.63	(0.97, 2.74)
	216	71.8	1.00	–	77	48.1	1.00	–
Currently employed	174	66.9	0.86	(0.60, 1.24)	90	52.9	1.18	(0.75, 1.86)
	204	70.1	1.00	–	63	48.8	1.00	–
Has health insurance	299	72.4	1.91	(1.27, 2.86)	79	51.6	1.04	(0.66, 1.64)
	77	57.9	1.00	–	73	50.7	1.00	–
Lives with a sexual partner	57	62.6	0.73	(0.45, 1.16)	38	52.1	1.05	(0.62, 1.78)
	321	69.8	1.00	–	115	50.9	1.00	–
Currently a full or part time student	90	63.8	0.75	(0.50, 1.12)	58	44.6	0.64	(0.40, 1.02)
	290	70.2	1.00	–	93	55.7	1.00	–
Ever spent a night in jail	269	74.1	2.06	(1.42, 2.98)	52	65.0	2.19	(1.29, 3.72)
	110	58.2	1.00	–	101	45.9	1.00	–
Stable housing	246	64.9	0.56	(0.37, 0.84)	137	50.9	0.78	(0.35, 1.71)
	133	76.9	1.00	–	16	57.1	1.00	–
Alcohol use, past 3 months	299	67.8	0.82	(0.52, 1.30)	119	57.2	2.24	(1.35, 3.72)
	82	71.9	1.00	–	34	37.4	1.00	–
Marijuana use, past 3 months	214	67.5	0.86	(0.60, 1.24)	55	59.1	1.62	(0.99, 2.67)
	167	70.8	1.00	–	97	47.1	1.00	–
Illicit substance use, past 3 months	69	71.9	1.20	(0.74, 1.95)	5	29.4	0.38	(0.13, 1.12)
	311	68.1	1.00	–	147	52.1	1.00	–
	N	Mean (SD)	p-value*		N	Mean (SD)	p-value*	
Age	380	34.64 (11.68)	0.003		151	31.35 (9.92)	0.400	
	171	31.45 (11.36)			144	32.39 (11.21)		
HIV conspiracy beliefs	371	18.54 (6.33)	0.330		145	16.88 (6.71)	0.303	
	168	19.11 (6.41)			139	16.11 (5.94)		
HIV stigma	378	21.49 (8.64)	0.010		147	24.46 (9.13)	0.062	
	171	23.54 (8.31)			137	26.51 (9.36)		
HIV transmission knowledge	379	11.31 (1.84)	0.007		146	10.40 (2.94)	0.011	
	173	10.72 (2.54)			135	9.42 (3.41)		

* p-value from independent samples t-test; compares characteristic among those reporting received HIV test within past year versus those who did not

Table 3

Adjusted odds ratios for reporting HIV testing in the past year, BTWB (n = 722)

Characteristic	AOR (95% CI)	p-value
Born in the United States	1.28 (0.87, 1.86)	0.207
Age	0.99 (0.98, 1.01)	0.627
High school or equivalent	1.57 (1.03, 2.37)	0.035
Income of at least 10 k	0.89 (0.63, 1.25)	0.501
Currently has health insurance	1.43 (1.01, 2.02)	0.046
Stable housing	0.53 (0.33, 0.85)	0.009
Currently a full or part time student	1.06 (0.73, 1.54)	0.775
Ever jail/prison	1.87 (1.27, 2.74)	0.001
Marijuana use	0.91 (0.63, 1.30)	0.597
Alcohol use	1.04 (0.69, 1.58)	0.851
Other illicit drug use	0.68 (0.41, 1.12)	0.128
HIV transmission knowledge	1.06 (0.98, 1.14)	0.127
HIV stigma	0.98 (0.96, 1.01)	0.131

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