GetaKit is a University of Ottawa study to evaluate an online assessment and mail-out system for sexual health services. Here's what we found.

African, Caribbean, or Black participants report lower levels of STI/HIV risk but equal or higher rates of STI/HIV diagnoses: The GetaKit.ca Study

The collection of race/ethnicity-based data is critical to identify and address health inequities in Canada. Despite this, there remains a significant lack of race-based data for other sexually transmitted infections (STIs), despite rising infection rates, particularly in Ontario. To address this gap, we assessed STI diagnosis rates by race/ethnicity—especially among Black participants—and explored whether disparities seen with HIV and COVID-19 also exist for other STIs.

Here is what we found

Black participants reported lower rates of injection drug use and sex work. Among subgroups, Black women reported less receptive vaginal or anal sex, and Black gbMSM (gay, bisexual, or men who have sex with men) reported less receptive anal sex. However, there were no significant differences in sexual practices among heterosexual men or in overall anal sex among gbMSM between Black and White participants.

Additionally, Black and White participants were equally likely to report that their partners had HIV risk factors or were recently diagnosed with an STI. Black participants reported lower overall use of HIV pre-exposure prophylaxis (PrEP) and lower rates of prior STI/HIV testing compared to White participants. This trend remained significant among Black gbMSM for testing, though not for PrEP use. Black participants also reported fewer past STI diagnoses overall, particularly for chlamydia and gonorrhea—mainly among cisgender men and women—while syphilis diagnosis rates were similar across groups. Despite lower reported histories of STI diagnosis and testing, the actual rate of chlamydia diagnosis during testing was significantly higher among Black participants (13.5%) compared to White participants (3.3%). HIV self-test positivity rates did not differ between the two groups.

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O'Byrne, Patrick; Etowa, Josephine; Jacques, Amoy; Malemo, Luc; McCready, Lance; Durand, Garfield; Inoua, Haoua; Salam, Khaled; Orser, Lauren; Newman, Hannah; Musten, Alexandra; Lindsay, Jennifer; Haines, Marlene

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GetaKit.ca

African, Caribbean, or Black participants report lower levels of STI/HIV risk but equal or higher rates of STI/HIV diagnoses: The GetaKit.ca study

Patrick O'Byrne[1,2], Josephine Etowa[1], Amoy Jacques[1], Luc Malemo[2], Lance McCready[3], Garfield Durand[4], Haoua Inoua[5], Khaled Salam[5], Cory Wong[5], Lauren Orser[1,2], Hannah Newman[1,2], Alexandra Musten[1], Jennifer Lindsay[1], and Marlene Haines[1]

[1] School of Nursing, University of Ottawa, Ottawa, Ontario, Canada
[2] Ottawa Public Ottawa, Ontario, Canada
[3] University of Toronto, Ontario, Canada
[4] Black Coalition for AIDS Toronto, Ontario, Canada
[5] AIDS Committee of Ottawa, Ontario, Canada

The COVID-19 pandemic and the HIV epidemic have both highlighted the need of race/ethnicity-based data to inform responses to infectious disease outbreaks. However, no such public health data exist in Canada. To generate some such data, we extracted data from the GetaKit.ca study, which is a website through which persons in Canada could obtain free HIV self-tests. We used data from April 1, 2021, to March 31, 2024. From 8,459 participants, of whom 16% (n = 1240) identified as Black, we found that Black participants reported low levels of risk factors for STI/HIV acquisition. We also identified that Black compared to White participants reported lower rates of prior STI/HIV testing and prevention services, and lower overall rates of self-reported prior STI/HIV diagnoses, although this difference mainly only applied to prior chlamydia or gonorrhea infections among cis-male participants; there were no differences for the rates of self-reported prior syphilis infections (overall and in gay, bisexual, or other men who have sex with men) or chlamydia infections in cis women. Finally, diagnostic outcomes in the study identified nonsignificantly different rates of HIV diagnoses (from the HIV self-tests) but higher rates of chlamydia (from laboratory testing) among Black participants. These results highlight the need for more race/ethnicity-based data. They also suggest that current metrics of STI/HIV risk may not work well for Black populations.

KEYWORDS: HIV, testing, Black, implementation, STIs

In Canada, the HIV and COVID-19 epidemics highlighted how important it is for public health officials to collect race/ethnicity-based data about who is being tested for, and who is being diagnosed with, infectious diseases. Data on COVID-19 and HIV revealed which groups were—and continue to be—most affected by these infections and enabled better resource allocation for prevention, diagnosis, and treatment within these populations (Public Health Agency of Canada [PHAC], 2023; Thompson et al., 2021). Without understanding if Black, Indigenous, East Asian, or White individuals experience(d) a greater burden of a given condition, resources can end up being distributed equally, which may be inequitable if certain groups are disproportionately affected.

Studies on HIV and COVID-19 have shown that persons who are Black are disproportionately affected by these infections, leading to increased efforts to remove barriers to testing for members of these communities through outreach and self-testing initiatives and by tailoring clinical guidelines to ensure that clinicians offer and complete more frequent testing at patient visits (Mbuagbaw et al., 2022; Olanlesi-Aliu et al., 2024;

CORRESPONDENCE concerning this article should be addressed to Patrick O'Byrne, University of Ottawa, 6363, School of Nursing, 451 Smyth Road, Ottawa, Ontario, Canada, K1N 6N5. E-mail: pjobyrne@uottawa.ca.

Ontario Ministry of Health, 2023). Research has similarly identified that Black, compared to White, Canadians have higher rates of other health conditions, including cancer, mental health, diabetes, hypertension, and heart disease (Fante-Coleman & Jackson-Best, 2020; Lebrun & LaVeist, 2011; Veenstra & Patterson, 2016). Notably, most of these differences in health status have shown these health disparities while controlling for weight, education, and income, suggesting that other social issues are at play.

Despite this awareness regarding the importance of race/ethnicity-based data, there is a paucity of such data for sexually transmitted infections (STIs), including gonorrhea, chlamydia, and syphilis—and this is highly problematic as we observe increases in these infections in the entire population year over year (Nelson, Tharao, et al., 2019). In Ontario, in 2022, there was a 25% increase in HIV diagnoses from 2021, and a 109% increase in syphilis diagnoses since 2018; congenital syphilis rates, meanwhile, increased 600% in the same timeframe (Ontario HIV Epidemiology and Surveillance Initiative [OHESI], 2023; Public Health Ontario [PHO], 2024a). While changes in the sex-based distributions for infections like syphilis have been well documented, we have no data to inform us if similar changes occurred regarding race/ethnicity. The lack of public health data on this topic leaves us uninformed and unprepared as we face the mounting public health issue of increased and increasing STIs (Orser et al., 2022; PHO, 2024).

To generate some nascent data on this topic, we reviewed data from GetaKit.ca, which was a web-based platform that offered asynchronous access to clinically indicated STI/HIV testing, wherein participants registered, completed an STI/HIV risk assessment, and obtained clinically indicated testing, including HIV self-tests and laboratory-based testing for gonorrhea/chlamydia, syphilis, hepatitis C, and HIV. In the first 3 years of running the study, more than 12,000 orders were placed, which means this study offered a large database of persons who have sought STI/HIV testing, including information about who they are (demographics and prior STI/HIV testing and diagnoses) and what they do (sexual and drug use practices).

We had two goals in analyzing the GetaKit.ca STI/HIV testing data: (a) to identify the rates of STI diagnoses based on self-report and test outcomes, both overall and by race/ethnicity (focusing on Black participants), and (b) to determine if there were differences in these rates for Black participants. We sought to determine if the health inequities that have been identified in the epidemiology of HIV and COVID-19 extended to STIs as well, because, as mentioned, no public health data currently exist on this topic.

METHODS

GetaKit.ca was a prospective observational open-cohort study that offered clinically indicated STI/HIV testing services. Services included self-tests for HIV, laboratory-based serology for HIV, syphilis, and hepatitis C, and laboratory-based urine and oral/rectal swab testing for gonorrhea and chlamydia. The HIV self-test we distributed was the bioLytical INSTI® device, as it was the only test licensed in Canada during the study (bioLytical, 2024). Laboratory testing was conducted through private facilities and PHO. The availability of HIV self-tests through GetaKit.ca started as a pilot on July 1, 2020, in Ottawa, Canada (national capital city of over 1 million people) and began expanding across Ontario on April 1, 2021. On July 1, 2021, GetaKit.ca became available Ontario-wide (Canada's most populace province, with over 18 million residents; O'Byrne, Musten, Orser, Inadmar, et al., 2021; O'Byrne, Musten, Vandyk, 2021; O'Byrne, McCready, et al., 2023; O'Byrne et al., 2024). Access to STI testing began on June 1, 2023 (for urine gonorrhea and chlamydia testing only) and expanded to full STI testing (swabs, serology) on December 11, 2023. Initially, STI testing was only available in designated regions of Ontario.

We used GetaKit.ca to obtain data for analysis because this platform constitutes a close approximation to how public health surveillance data are typically collected: self-report at the point of care when persons seek testing and diagnostic test outcomes for reportable infections (PHAC, 2024a). That is, what we currently know about STI/HIV epidemiology is mostly based on what patients report when they seek testing and their subsequent test results. GetaKit.ca provides data in a similar way because, to obtain testing from the system, participants had to complete an STI/HIV risk assessment to determine their eligibility for testing. This self-assessment collected information on STI/HIV risk, demographics, and past medical history.

Eligibility

To be eligible, persons had to have risk factors for STI/HIV acquisition and fulfill either or both of the following: For the HIV self-test, people had to be 16 years of age or older, not be diagnosed with HIV, not have a known bleeding disorder, not be participating in an HIV vaccine study, and live in Canada; for STI testing, people had to be 18 years of age or older and live in Ontario. All eligible participants had to review and digitally sign the research consent forms.

Recruitment

Recruitment occurred online and in person. Media articles and social media posts were used to inform people about GetaKit.ca and other available services in their regions. In-person outreach to AIDS service organizations and community events (e.g., fairs and Pride events), where recruitment information was given out, enabled on-site registration and distribution of HIV self-tests. AIDS service organizations amplified recruitment by informing people about the study; they did this in person, via social media, and by affixing posters at their venues.

Data Collection

To participate, persons had to create an account through GetaKit.ca and complete a sexual health risk assessment, which asked questions about demographics (age, country of birth,

race/ethnicity, sex/gender, sexual orientation), risk practices (sexual and drug use behaviour), and past medical history (including prior STI/HIV testing and diagnoses, use of HIV pre-exposure prophylaxis [PrEP], contraception, etc.). (See Table 1 for a full list of questions.) These questions were not designed as a research tool, but rather, were developed based on the PHAC (2024b) and United States Centers for Disease Prevention and Control (CDC; 2023) guidelines for completing sexual health assessments to ensure participants received clinically indicated testing, focusing on the five "p's" of history collection: *partners*, *practices*, *protection*, *pregnancy*, and *past diagnoses*. Moreover, race/ethnicity questions were based on the Public Health Ontario HIV serology requisition and included the following categories: White, African, Caribbean, or Black (ACB), Indigenous, South Asian, Southeast/East Asian, Arab/West Asian, Latin American, and other. We used these categories to allow for direct comparison with the provincial laboratory system.

As the next step, the GetaKit.ca algorithm used participants' information to generate a list of recommended sexual health services that were tailored to each person; participants then had to individually opt in/out of each test (O'Byrne, Musten, Orser, et al., 2021). Prior research suggests that this approach of having participants manually opt in/out of each test is a preferred strategy among patients to provide consent for testing (Gilbert et al., 2017). After participants selected and submitted their requests for testing, a study nurse asynchronously reviewed the orders to ensure they complied with clinical guidelines. All approved testing was provided to eligible participants, who could complete the self-test at home (or another location of their choosing) and/or visit a local specimen collection centre to complete the laboratory-based testing. Laboratory results were received and reviewed by the GetaKit.ca nurses, who made them available to participants through their GetaKit.ca accounts. Anyone who required STI or HIV treatment was directly linked to a local STI clinic for in-person assessment and management, plus partner notification, tests of cure, and other preventative services (PHAC, 2024b). These treatment pathways were established in advance of making STI testing available in any region.

Data collection occurred via the website. Each participant was assigned a unique ID when they registered, and each order was tracked per participant. This allowed us to review overall orders and total orders per participant. Within each order, participant data were tracked, giving us information on demographics, risk assessment, tests ordered, and test results.

TABLE 1. GetaKit risk assessment questions

Category	Assessment questions
Demographic	• County of birth
	• Race/ethnicity
	• Sex/gender
	• Sexual orientation
Risk practices	• Sex of sex partners
	• Risk practices of partners (e.g., gbMSM, injection drug use)
	• Sex practices (oral, vaginal, anal)
	• Sex work (buying, selling)
	• Injection drug use
STI history	• Previous HIV/STI testing
	• Previous HIV/STI diagnosis/es
Medical history	• HIV PrEP use
	• Contraception use

Note. gbMSM = gay, bisexual, or a man who has sex with men; STI = sexually transmitted disease; PrEP = pre-exposure prophylaxis.

Data Analysis

All collected data could be exported into a CSV file and downloaded for analysis. For this review, we used the last three years of the full study data set (i.e., excluding the HIV self-test pilot period), which was from April 1, 2021, to March 31, 2024. We also focused on unique participants, rather than individual orders, to ensure that single persons who ordered more than once would not skew the results (due to repeating demographic and risk information appearing in the database from their re-orders). Repeating testing orders were therefore removed from the data set, keeping the last entry for analysis. Data analysis included descriptive statistics (counts, frequencies, and means). Chi-square analyses were performed to identify statistically significant differences by race/ethnicity, reported rates of testing, and prior STI/HIV diagnoses. We did the same analyses for reported test results for the HIV self-test and laboratory-based chlamydia urine screening. No other STIs were analyzed due to small cell sizes during analysis. A p-value of .05 was selected a priori to determine significance.

As our primary interest was to generate nascent race/ethnicity-based data for Black persons regarding STI/HIV testing and diagnosis rates, we focused on this group and used White participants as the comparator. This occurred for a few reasons. First, White participants represented the largest single race/ethnicity group in the GetaKit.ca data set. Second, the current literature shows that, in Canada, Black persons, compared to White persons, often have worse health outcomes, poorer access to care, and less service availability. We wanted to determine if this situation also existed regarding sexual health. Third, we did not want to compare Black, Indigenous, and persons of colour (BIPOC), as a single amorphous group, to those who are White because this might have effaced important subgroup findings for Black persons. There are likely many subpopulation findings that warrant separate and in-depth analyses for each group within the larger BIPOC grouping. Additionally, we did not want to compare Black participants to everyone else, as this might also have hidden important findings regarding testing and/or testing rates among Black participants, if other persons of colour had similar situations of disadvantage.

As a final step, we took our data to an advisory group composed of local Black researchers, community members, and advocates to obtain feedback and help with interpretation. This feedback is incorporated into the results and discussion.

Research Ethics

The research ethics board at the University of Ottawa approved this project (H-12–20-6450), and funding was obtained from the Ontario HIV Treatment Network (EFP-2020-DC1), Public Health Agency of Canada, and Public Health Ontario (LDCP 2023). The funders did not have any input on or influence over data analysis or publication.

RESULTS

From April 1, 2021, to March 31, 2024, 8,459 unique participants made 12,717 testing requests through GetaKit.ca. The average age of these participants was 32 years (range: 16–86 years). The majority (95%, n = 7,858/8,459) of these orders arose from persons who lived in Ontario.

Overall, 9% (n = 606/8,459) of GetaKit.ca participants reported involvement in sex work (purchasing or selling), 8% (n = 551/8,459) reported injection drug use, and 40% (n = 2,774/6,932) indicated that this was their first time undergoing STI/HIV testing. Among participants who reported prior STI/HIV testing (n = 4,158), 29% (n = 1,203/4,158) reported a previous diagnosis. Of those with a prior diagnosis, 67% (n = 809/1,203) reported previously testing positive for chlamydia, 39% (n = 473/1,202) reported previously testing positive for gonorrhea, 17% (n = 201/1,202) reported previously testing positive for syphilis, and 2% (n = 24/1,202) reported previously testing positive for HIV (See Table 2). Regarding race/ethnicity, 16% (n = 1240) of participants identified as Black and 44% (n = 3535) as White. For province of residence, 91% (n = 1,129/1,240) of Black participants reported living in Ontario, and 93% (n = 3,270/3,535) of White participants reported living in Ontario.

For risk factors, compared to White participants, Black participants reported less injection drug use (X^2 = 27.8, $p < .001$) and less sex work (X^2 = 9.3, p = .002). Female Black participants reported less receptive vaginal and/or anal sex (X^2 = 12.72, $p < .001$), and Black participants who identified as gay, bisexual, or a man who has sex with men (gbMSM) reported less receptive anal sex (X^2 = 4.5, p = .03), but there were no differences in the reported rates of vaginal and/or anal sex among heterosexual male Black participants (X^2 = 1.96, p = .16) or any type of anal sex among gbMSM participants (X^2 = 0.02, p = .9). There was also no difference in the rate of Black compared to White participants' reporting that their sexual partners had risk factors for HIV acquisition (X^2 = 0.91, p = .3) or that they were the sexual contacts of someone who was recently diagnosed with an STI (X^2 = 0.89, p = .3). (See Table 3 for all chi-square analyses.)

For access, Black participants overall reported less use of HIV preexposure prophylaxis (X^2 = 6.8, p = .009), although this difference disappeared in the sub-analysis of gbMSM participants (X^2 = 1.1, p = .3). Black participants also reported less prior STI/HIV testing (X^2 = 6.8, p = .009), and this held true for the sub-analysis of Black gbMSM, who also reported lower rates of prior STI/HIV testing compared to White participants (X^2 = 4.96, p = .02).

TABLE 2. Characteristics of GetaKit participants

	N	%
Gender (n = 7,883)		
Cis male	4,715	59.8
Cis female	2,398	30.4
Trans male	132	1.7
Trans female	94	1.2
Nonbinary	544	6.9
HIV Exposure Categories (n = 6,893)		
Heterosexual	3,343	48.5
gbMSM	3,049	44.2
Race/Ethnicity (n = 7,959)		
Black	1,240	15.6
Arab	428	5.4
Indigenous	225	2.8
Latinx	376	4.7
East Asian	1,095	13.8
South Asian	632	7.9
White	3,535	44.4
Sex Work (n = 6,932)		
No	6,326	91.3
Yes	606	8.7
Injection Drug Use (n = 7066)		
No	6,515	92.2
Yes	551	7.8
Prior HIV/STI Testing (n = 6,932)		
First time	2,774	40.0
Yes	4,158	60.0
Prior STI Diagnosis (n = 4,157)		
No	2,954	71.1
Yes	1203	28.9
Which Prior STIs (n = 1,203)		
Chlamydia	809	67.2
Gonorrhea	473	39.3
Syphilis	201	16.7
HIV	24	2.0

Note. gbMSM = gay, bisexual, or a man who has sex with men; STI = sexually transmitted infection.

For past medical histories, compared to White participants, Black participants reported fewer prior STI diagnoses overall (X^2 = 33.3, $p < .001$), which was influenced by lower reported rates of prior chlamydia (X^2 = 8.8, p = .003) and gonorrhea (X^2 = 18.99, $p < .001$) diagnoses. Among gbMSM who reported prior STI/HIV testing, Black compared to White participants reported fewer prior diagnoses (X^2 = 5.5, p = .02). There were no differences, however, in the rates of prior syphilis diagnoses overall (X^2 = 2.1, p = .1) or among gbMSM (X^2 = 3.2, p = .07), and there were no differences in the sub-analysis of prior chlamydia diagnoses among cis women (X^2 = 3.2, p = .07). This signals that the differences we observed arose due to variances in the reported rates of prior chlamydia (X^2 = 9.96, p = .001) and gonorrhea infections (X^2 = 15.5, $p < .001$) among cis men and due to reported rates of prior gonorrhea infections among cis women (X^2 = 5.5, p = .02).

For test results, the positivity rate for the HIV self-test was not significantly different between Black and White participants

TABLE 3. Chi-square analyses

Characteristic		Black *N*	White *N*	Bivariate X^2	*p*
Risk Factors					
Injection drug use				27.7730	<.001
	Yes	51	319		
	No	994	2,795		
STI contact				0.8874	ns
	Yes	54	139		
	No	999	3,002		
Partners with HIV/STI risk factors				0.9160	ns
	Yes	385	1,116		
	No	635	1,977		
Sex work				9.3492	.002231
	Yes	66	297		
	No	954	2,796		
Vaginal/anal sex (females)				12.7274	.00036
	Yes	257	720		
	No	30	34		
Vaginal/anal sex (heterosexual males)				1.9665	ns
	Yes	203	430		
	No	19	26		
Any anal sex (gbMSM)				0.0208	ns
	Yes	176	989		
	No	33	180		
Receptive anal sex (gbMSM)				4.5000	.033895
	Yes	109	713		
	No	96	455		
Access					
Using HIV PrEP (overall)				6.8466	.008881
	Yes	31	152		
	No	1,013	2,956		
Using HIV PrEP (gbMSM)				1.0698	ns
	Yes	23	133		
	No	273	1,238		
Prior HIV/STI testing (overall)				6.7706	.009267
	Yes	655	2,135		
	No	305	806		
Prior HIV/STI testing (gbMSM)				4.9617	.025915
	Yes	208	1,056		
	No	81	297		
Past Medical History					
Prior STI diagnoses (overall)				19.4216	<.001
	Yes	157	706		
	No	498	1,429		
Prior STI diagnoses (gbMSM)				5.5385	.018602
	Yes	57	379		
	No	151	677		
Chlamydia (overall)				8.8370	.002952
	Yes	116	493		
	No	543	1,644		
Chlamydia (females)				3.2268	.07244
	Yes	61	208		
	No	223	565		
Gonorrhea				18.9931	<.001
	Yes	48	291		
	No	611	1,845		
Syphilis (overall)				2.1480	ns
	Yes	24	108		
	No	630	2,026		
Syphilis (gbMSM)				3.1657	ns
	Yes	22	105		
	No	34	274		
Results					
HIV self-test				0.3301	ns
	Positive	4	8		
	Negative	1217	3,456		
Chlamydia				10.2107	.001396
	Positive	7	10		
	Negative	45	296		

Note. STI = sexually transmitted infection; ns = nonsignificant; gbMSM = gay, bisexual, or a man who has sex with men; PrEP = pre-exposure prophylaxis.

(X^2 = 0.3, p = .57), but the rate of chlamydia diagnosis was, at 13.5% (n = 7/52) for Black participants and 3.3% for White participants (n = 10/306; X^2 = 10.2, p = .001).

DISCUSSION

In this article, we presented data from the GetaKit.ca study, focusing on Black participants' self-reported STI/HIV risk factors and self-reported rates of prior STI/HIV diagnoses, plus their diagnostic outcomes for HIV self-tests and laboratory-based urine screening for chlamydia. We sought to generate nascent data on STI epidemiology based on race/ethnicity.

Based on 8,459 participants, of whom 16% (n = 1,240) identified as Black and 44% (n = 3,535) as White, we found that, compared to White participants, Black participants' reported risk factors for STI/HIV acquisition were either lower (e.g., less sex work, less injection drug use, and less receptive penetrative sex among females and gbMSM) or no different (e.g., same rates of being an STI contact and having partners with STI/HIV risk factors and same rates of engaging in penetrative sex among heterosexual males and gbMSM). We also identified that, overall, compared to White participants, Black participants reported lower rates of prior STI/HIV testing and prevention services (including PrEP); Black gbMSM participants meanwhile reported less prior STI/HIV testing but equal rates of PrEP use. Also, we noted lower overall rates of self-reported prior STI/HIV diagnoses among Black compared to White participants, although this difference mainly only applied to prior chlamydia or gonorrhea infections among cis-male participants; there were no differences for the rates of self-reported prior syphilis infections (overall and in gbMSM) or chlamydia infections in cis women. Finally, diagnostic outcomes in our study identified

nonsignificantly different rates of HIV diagnoses (from the HIV self-tests) but higher rates of chlamydia (from lab testing) among Black participants. These results raise a few points for discussion.

First, as was our main goal here, our data shed some light on STI prevalence among Black persons in Canada, most of whom (>90%) reported living in Ontario. Among those who reported prior STI/HIV testing, 24% of Black participants noted a previous STI diagnosis: 18% reported a prior chlamydia infection, 7% reported a prior gonorrhea infection, and 4% reported a prior syphilis infection. The self-reported rate of prior syphilis infection rose to 39% among Black gbMSM, and the self-reported rate of prior chlamydia infection rose to 22% for Black cis women. These findings align with previous research, which showed high rates of STIs in Black cohorts (Luginaah et al., 2022; Nelson, Tharoa, et al., 2019). Our rates, however, were higher than those identified by Nelson, Tharoa, et al. (2019) on STI/HIV prevalence among Black participants in Toronto, Canada. The differences we observed might relate to time, as the rates for most STIs have been increasing over the last decade (aside from during 2020–2021 due to reduced testing access due to COVID-19 pandemic restrictions). Alternatively, differences may relate to sampling methods or recruitment of persons with higher risks for STI acquisition (as GetaKit.ca participants had self-selected to obtain STI/HIV testing based on personal perceptions of risk). Another option is that our rates differ because our sample included both male and female participants, in contrast to most previous studies that only collected data from Black male participants (Luginaah et al., 2022; Nelson, Tharao, et al., 2019).

Where our study diverges from much of the current literature is that we had the same survey and diagnostic data for Black and White participants and thus were able to compare the two groups using the same metrics. From such analyses, among participants who reported prior STI/HIV testing, we identified lower rates of self-reported prior STI diagnoses among Black compared to White participants. In direct contrast to this finding, however, is that our diagnostic outcomes for the HIV self-tests and laboratory-based urine chlamydia testing showed equal (HIV) or higher (chlamydia) rates of infection among Black compared to White participants. We feel that such comparative analyses are essential because self-reported or objective test-based results for single populations can be challenging to interpret without meaningful comparators. In other words, determining if a reported or identified rate of STI/HIV infection is high or low without knowing the same rates (collected using the same metrics) in other groups is difficult (PHAC, 2024a).

Our findings thus reinforce the importance of ensuring that STI/HIV data collection on race/ethnicity becomes standardized, including that it becomes a required data field for STI/HIV public health surveillance in Canada. Without such data, we are left to surmise about need and burden of infection within subpopulations, and we are left attempting to compare rates of infections between different populations based on different methodologies and self-report. Race/ethnicity-based data should also be shared with affected communities, as these data arise from and belong to the members of the groups who are being described (Evans et al., 2023; Weinstein et al., 2023). Members of these communities should equally be involved in data collection, review, analysis, and dissemination (Shimeles et al., 2011).

Second, our data suggest that current guidelines on how to perform STI/HIV risk assessments might not be sensitive for Black persons (CDC, 2023; O'Byrne, Musten, et al., 2023; PHAC, 2024b). Based on self-reported metrics per the PHAC and CDC sexual health risk assessment guidelines (i.e., sex practices, drug use, sex work, prior STI diagnoses), Black participants appeared to be at lower risk for STI/HIV acquisition but had diagnostic numbers from the HIV self-tests and from the laboratory-based urine chlamydia testing that were equal to or higher than White participants, respectively (CDC, 2023; PHAC, 2024b). Further supporting our assertion that currently accepted measures of STI/HIV risk may not apply well to Black persons is that, in 2018, despite Black persons accounting for only 5% of the population in Ontario, they accounted for 25% of new HIV diagnoses (Antabe et al., 2021; Etowa, Omorodion, et al., 2022; Mbuagbaw et al., 2022).

One explanation is that Black persons may have been reluctant to disclose certain information due to long-standing—and very real—situations of persecution, prosecution, and discrimination in health care. For example, our Black participants may have feared that disclosing information about their sexual or drug use practices could have led to consequences like deportation or police surveillance. Limited trust in research systems may have also reduced veracity. The history of the Tuskegee trials is all too recent. In all such cases, withholding information is not a criticism of any participants but, instead, is a founded response that likely functions in many daily situations as a safety mechanism to protect Black persons within a broader system of racism. In other words, when the broader social system of discrimination imposes self-censorship to ensure (or at least maximize) safety, we would expect this systemic situation to impact our research results as well.

Another explanation is that the GetaKit.ca questions we designed were not culturally appropriate to elicit sensitive information on sexual and drug use practices from Black participants. This may relate to wording or to baseline knowledge among diverse groups. It may have equally related to a failure on the side of the research team to have adequately translated different concepts and practices from more mainstream Canadian language and jargon to wordings and explanations that can be accurately understood by diverse populations. In other words, cultural translation of terms surrounding human sexuality may have influenced our data.

There may also be other factors—probably linked to the determinants of health—that are more influential in explaining STI/HIV transmission among Black populations (Nelson, James, et al., 2019; Nelson, Tharao, et al., 2019). Adding to this is that engagement in any practices that can transmit STIs/HIV will likely do so more frequently in smaller closed populations with higher prevalence of infection (Patel et al., 2021; PHAC, 2022). In other words, each sexual contact may pose a

higher risk for STI/HIV acquisition for Black persons due to a higher probability of exposure (based on higher population prevalence of infection). This signals that STI/HIV transmission within Black populations is not based on individual-level factors (such as a person's decision to have sex, use drugs, or engage in sex work), but rather, relates to network-level factors of prevalence and social deprivation (Mbuagbaw et al., 2022). That is, decreased access to STI/HIV testing and prevention services (i.e., social deprivation) means that condomless sex has a higher probability of HIV acquisition because other strategies (like chemoprophylaxis) are less available within specific populations. This assertion has profound implications for health promotion work, which should address the social and structural factors that exacerbate STI inequities within Black populations.

In any case, our findings signal that there may be a disconnect between how clinicians assess STI/HIV risk from a public health perspective and the degree to which people are at risk for STIs and HIV. Our data suggest that this might be the case for Black persons. The important item here is that it does not matter whether the information we obtained was inaccurate (for whatever reasons) or that our data focused on the wrong item. Instead, what is key is that the data we collected fulfill the current clinical standard for STI/HIV risk assessments in Canada and the United States and that these questions did not determine risk well for Black participants. Stated differently, our Black participants were not reporting the risk factors that health care providers ask about in clinical situations to determine patients' need for STI/HIV testing and/or prevention services. Clinically, this would mean that these services might not be offered. However, the diagnostic rates we observed (and which were reported to us) said otherwise. This thus leads us to surmise that the questions that clinicians are trained to use to assess the risk of STI/HIV acquisition may not work for diverse populations.

We thus take our findings to mean that, at the clinical level, it might be prudent for STI/HIV prevention services to be offered based on different criteria for Black persons. For example, the reported rates of receptive anal sex and of prior STI diagnoses among our gbMSM participants were lower among Black compared to White participants, which would mean that relying on these criteria (as is currently recommended in the Canadian PrEP guidelines) would mean that PrEP would be offered less frequently to Black gbMSM (Tan et al., 2017). Noting the disproportionate rate of HIV prevalence among Black populations in Ontario and the noninferior rate of PrEP use in our study, PrEP should be promoted for gay Black men (OHESI, 2023). When the rates of infection are higher, the rates of offering and using PrEP should be higher as well. We suggest offering PrEP to anyone who engages in practices that can transmit HIV and belongs to a group with a higher rate of HIV infection (O'Byrne et al., 2019). This would apply to persons who are Black, gbMSM, Indigenous, and who use drugs, plus others based on local HIV epidemiology (PHAC, 2022). It should also apply to women who are vulnerable to HIV for social and structural reasons, including survival sex (OHTN, 2023). Considering the lower rates of reported risk factors—despite equal or higher actual infection rates—we think that such a modification in practice is warranted. Our data also highlight the importance of collecting both subjective (i.e., self-report) and objective data (test results) on STI diagnoses, as it showed herein that these two metrics may not always align with clinical outcomes. Qualitative studies exploring how Black persons explain these discrepancies related to a public versus a private conceptualization and communication of STI/HIV risk are also needed.

Third, despite the foregoing limitations of the STI/HIV risk assessments for Black persons, it is important to note that GetaKit.ca created an access point to testing for a sizeable number of Black persons (n = 1,240), a number of whom (36%) reported this was their first time doing STI/HIV screening. Researchers have previously called for increased access to care and GetaKit.ca may have created an opening to deliver such services (Luginaah et al., 2022; Mguagbaw et al., 2022; Nelson, Tharao, et al., 2019). This point should not be made without appreciating, however, that GetaKit.ca did not just provide unrestricted access to STI/HIV testing. Persons did have to complete a risk assessment and be deemed at-risk for STI/HIV acquisition, although the level of risk required to be recommended STI/HIV testing varied by population. That is, members of groups with higher STI and/or HIV prevalence (such as Black persons) were automatically offered STI and/or HIV testing if they reported any risk of transmission (including oral sex; O'Byrne, P., Musten, A., Orser, L., & Buckingham, S., 2021). Acknowledging that many of the practices that transmit STIs and HIV, such as vaginal and anal sex, are highly stigmatized, we lowered the threshold to offer STI/HIV testing for members of groups with higher prevalence, while we required a higher degree of reported risk for lower prevalence groups. (We have previously published the GetaKit.ca risk assessment algorithms; see O'Byrne, Musten, Orser, & Buckingham, 2021). We feel that this approach balances our findings related to discrepancies between self-reported risk and diagnostic outcomes. This approach may also overcome risk assessment limitations, which relate to stigma, distrust, cultural differences, or language barriers, and ensure that testing is offered (Alacron et al., 2020; Etowa, Tharao, et al., 2022; Etowa et al., 2023). Lastly, this approach still ensures the appropriate recommendation of self- and laboratory-based testing to help minimize the risks of false positive results or repeat positive results in persons who are already diagnosed with HIV (O'Byrne & Musten, 2023). More research is nevertheless required to further understand the findings that we identified from this study.

LIMITATIONS

Our findings must be interpreted considering certain limitations. First, the findings are mostly from persons who reported living in Ontario; provincial differences may exist, particularly considering the differences in STI/HIV epidemiology that exist in Canada. Nevertheless, these data are important to help understand the context in Ontario. Second, the GetaKit.ca study is mostly restricted to persons with good internet access and

digital literacy skills. Again, it is possible—and even probable—that different STI diagnostic rates may have emerged if we included STI/HIV risk assessment data and test results from persons who are more disadvantaged, for example, women who engage in survival sex. This platform, however, is not designed to provide services to populations who require more intensive outreach, but rather, to help provide testing to those who can be diverted from in-person to online care so that nurses and other health care professionals can be available to do outreach to other groups who cannot use an online platform for testing. Third, while the GetaKit.ca study has been operating for 3 years, the addition of STI testing was only within the last 10 months of the data set (urine gonorrhea/chlamydia testing), with full STI testing only having been made available within the previous 3.5 months of the data set. While diagnostic outcomes may change as the sample size grows, we have not observed such changes with our HIV self-test data as we expanded from the pilot to the provincial to the national levels for recruitment and distribution. We thus feel that this is a hypothetical rather than bona fide limitation of our data. Finally, our race/ethnicity data compressed Black into a single group. Future analyses should indicate the breakdown of Black by, for example, Black African, Black Caribbean, Black Canadians, and Black persons who are new to Canada compared to longer term residents, and others.

CONCLUSION

The GetaKit.ca study was a prospective open cohort study that offered HIV self-tests across Canada and full laboratory-based STI/HIV testing in parts of Ontario. This study was launched in phases starting in July 2020 through to December 2024, and data collection was based on the PHAC and CDC STI/HIV risk assessment guidelines. For this analysis, we extracted the data set from April 1, 2021, to March 31, 2024, which included 8,459 unique participants, of whom 16% (n = 1,240) identified as Black and 44% (n = 3,535) as white. This data set is thus one of the largest to exist in Canada exploring STI/HIV testing histories and diagnostic outcomes for Black participants and one of few involving Black women. Moreover, comparisons of Black and White participants found lower self-reported rates of STI/HIV risks and previous STI diagnoses in Black compared to White participants but equal rates of HIV diagnoses and higher rates of chlamydia diagnoses. These data thus raise one important takeaway point, which is that the extant STI/HIV risk assessment guidelines may not be sufficiently sensitive to detect risk in Black persons. We take this to mean that public health professionals and clinicians should consider offering STI/HIV testing and prevention services to Black populations more readily. We also take these data to mean that researchers need to explore if new metrics can be identified to help better assess risk in Black persons. In the meantime, however, we feel that online platforms like GetaKit.ca can be useful tools to offer services to Black persons, and we encourage the ongoing development, expansion, and improvement of these services in collaboration with Black communities. In doing so, hopefully we can begin to address some of the inequitable burden of STIs and HIV experienced by Black persons and begin to make true population-level improvements in health.

ORCID IDs

Patrick O'Byrne http://orcid.org/0000-0002-0587-1409
Lauren Orser http://orcid.org/0000-0001-7732-2866

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