The East African Health Study in Toronto (EAST):

Results from a Survey of HIV and Health-Related Behaviour, Beliefs, Attitudes, and Knowledge

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**TO ALL OF THE PARTICIPANTS, RECRUITERS, AND COMMUNITY WORKING GROUPS,
THANK YOU, AMESEGENALEHU, ASANTE SANA, WEBALE NYO, AND MAHADSANID!**

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EXECUTIVE SUMMARY

Communities from countries where HIV prevalence is high are also disproportionally affected by HIV/AIDS in Canada. In Ontario, trends indicate HIV prevalence among individuals from countries where HIV is endemic increased 72% from 2001 to 2006. Furthermore, a preliminary analysis suggested that cumulatively 22-59% of HIV-positive individuals from these countries had contracted the virus after arriving in Canada.

The East African Health Study in Toronto (EAST), a community-academic partnership, was the first large-scale Canadian survey of African communities from countries where HIV is endemic. EAST was conducted in response to the lack of population-based data necessary to assess HIV-related issues in these communities, and to assist in the development of intervention programs and strategies.

The purpose of EAST was to examine HIV/AIDS issues and concerns in the context of general health issues and behaviour present in five East African communities. The survey covered an extensive range of HIV and health-related issues such as immigration and mobility, social support, attitudes and beliefs, screening and testing, health conditions, risk behaviour, and health care utilization. The study, conducted between 2004 and 2006, included 456 participants (230 women and 226 men) in the Greater Toronto Area (GTA). There were 100 participants from the Ethiopian, Kenyan, and Somali communities, 101 Ugandans, and 55 Tanzanians. The cross-sectional survey consisted of an interview and HIV screening component; over three-quarters of the participants provided a saliva sample for laboratory testing.

This report contains the main descriptive results from the study and provides a broad overview of HIV and health-related issues in these communities; future manuscripts will focus on multivariate analyses and provide more in-depth analysis of particular issues. The report will be used to initiate community discussions, encourage further interpretation of results, and elicit recommendations for analysis and community action.

The study has made contributions in several key areas: the generation of new research knowledge, provision of a platform on which to base programs, services and policy decisions, and building of research capacity through community engagement and sharing of methodological 'lessons learned'. Below is a summary of the descriptive results.

SOCIO-DEMOGRAPHICS, IMMIGRATION, AND SOCIAL SUPPORT

- Of the 456 participants, 50% were female and 50% male. The average age was 34.5, with 59% of the participants Christian and 37% Muslim. The population was highly educated with almost three-quarters ever attending either college or university. The median annual personal income was approximately $22,000; however, 42% of participants reported a household income below the Low Income Cut-Off Index (LICO).
- Almost all participants were born in East Africa, although there was mobility in almost half of the population before locating to Canada. The average time in Canada was 10 years, with Ethiopians and Somalis in Canada longer than the other communities. Since arrival, 43% of participants have travelled back to sub-Saharan Africa.

- The majority of participants (83%) currently had permanent immigration status and 12% were refugees or refugee claimants. Somalis were more likely to have reported refugee status (ever) compared to the other communities.
- The majority of participants were in a relationship, with 41% married/common-law and a quarter reporting a boyfriend/girlfriend. Most (84%) of those in a relationship had a partner from an African country and a further 5% from a Caribbean country. Almost one-fifth had partners living outside of Canada.
- Almost three-quarters of the sample had at least one family member, and 94% had at least one close friend, in the GTA. Over one-third of participants spent all or most of their time with other members from their community and 61% spent some of their time with community members. More Somalis and Ethiopians reported spending all or most of their time with members of their community.

HIV and Other Health-Related Knowledge, Attitudes, and Beliefs

- Two-thirds of the sample felt that HIV/AIDS was either a minor or major problem in their community in Toronto, with 41% of participants citing it as a major problem. Despite this, participants generally felt they themselves were not at risk for HIV, with over a half reporting they were at no personal risk for contracting HIV and a further one-third felt they were at low risk. Participants who knew at least one HIV-positive person perceived themselves as having higher risk. The average perceived personal risk increased with number of sexual partners over the participant's lifetime and was higher for those who reported concurrent sex partners. However, there were participants with a high number of lifetime partners who still believed they were not at risk.
- The majority of participants said they would obtain health or HIV-related information from a professional health or social services advisor, followed by the internet and other self-help sources. Almost all participants knew at least one place to access condoms, with the majority reporting they would obtain condoms at a store, followed by health care facilities.
- Overall, knowledge about HIV and HIV transmission was high; however, 13% believed that, or did not know if, there is a cure for HIV. Furthermore, only 72% knew HIV could not be transmitted through the sharing of utensils and 67% knew it could not be transmitted through a mosquito bite. Knowledge of mother-to-child transmission was lower, with only half knowing that HIV could be transmitted through breastfeeding. Somali participants had the lowest HIV transmission knowledge of all the communities.
- The majority (68%) of participants reported they knew at least one HIV-positive person in either their home country or Toronto's East African community, with 40% reporting an HIV-positive family member. Fewer Somalis and more Ugandans knew an HIV-positive person and/or had a family member who was HIV positive.
- Overall, HIV-related stigma was relatively low; however, over half of the sample reported they would not eat in a restaurant where the cook was HIV positive, one-third would want it to be kept a secret if a family member was HIV positive, and almost one-quarter would not want their child in a classroom with an HIV-positive child. Somali participants gave the most, and Ugandans gave the least, stigmatizing responses. Those who knew someone living with HIV gave fewer stigmatizing responses; furthermore, stigma decreased as number of HV-positive

people known increased. Participants who provided fewer stigmatizing answers also had higher HIV knowledge scores and higher levels of perceived risk.

- Most participants reported that if they became infected they would disclose their HIV status to a family member and current/previous sexual partner. Almost all felt that other people who are diagnosed with HIV should tell their previous sexual partners. Of the 12 people who self-reported as being HIV-positive, five (42%) had not disclosed their HIV status to anyone.

HIV AND HEALTH-RELATED RISK

Sexual Behaviour

- Most (91%) participants reported ever having sex and the average age of first intercourse was 18.5. Over half of the sample had less than 5 sexual partners in their lifetime and 15% reported one partner; 9% reported 20 or more partners. Only 5% reported at least one same sex partner in their lifetime.
- Almost three-quarters of participants reported having sex in the previous year. Among those, 71% reported that their only sexual partner in the previous year was a regular partner. Almost one-fifth had two or more partners in the previous year and 14% reported concurrent sex partners; 11 of those reported that their regular sex partner also had concurrent sex partners. The majority (84%) had a sex partner in the previous year who was born in Africa.
- Men generally reported higher levels of sexually activity. Men started having sexual intercourse at a lower age, were more likely to have ever had sex, and to have more lifetime sexual partners. More men than women reported sex in the previous year, two or more partners in the previous year, non-regular sexual partners, and concurrent sexual partners. Fewer Somalis reported ever having sex and Ugandans reported a higher number of non-regular and concurrent sexual partners in the past year.

Condom Use in Previous Year

- Condom use with regular sexual partners was low, with 44% never using condoms and 29% not consistently using condoms. Condom use with casual partners was higher, with only 18% reporting not using condoms on at least one occasion. Of those who reported condom use, 39% reported at least one incident of imperfect condom use in the previous year. Fewer women than men used condoms all of the time.
- The most frequently (92%) reported reason for not using condoms on the last occasion was because the participant was with his/her regular partner. Half did not use condoms because they felt their partner did not have HIV/AIDS.

Other HIV-Related Risk

- Over three-quarters of men and almost one-quarter of women have been circumcised. Fewer Ugandan men and more Somali women were circumcised.
- Of the 6% of participants who reported receiving a blood transfusion or blood product, the majority had at least one transfusion in East Africa. Twelve percent of the population reported at least one surgery in East Africa. All 13 scarification marks were done in East Africa.

Health-Related Risk (Substance Use)

- Over one-third of the sample had never had a drink of alcohol. Although most (81%) participants drank less than 2-3 times a month or never, 29% reported

drinking 5 or more drinks on at least one occasion in the previous year. Women drank less often and less heavily than men. Fewer Somalis and more Ugandans reported ever drinking.

- Although only 11% of the sample currently smoked cigarettes daily, over one-fifth reported ever smoking daily. More men and Somalis reported ever smoking daily.
- One-quarter of the sample reported ever using illicit drugs (marijuana and chat were most commonly reported), with half of these using in the previous year; 5% reported ever using drugs on a weekly basis. There was no injection drug use reported. More men than women reported ever using drugs.

HIV Positivity, Sexually Transmitted Infections, and Other Health Conditions

- Based on saliva antibody test results, it is estimated that HIV prevalence within the communities ranges between 0.03% and 3.7%. Almost all of the HIV-positive participants thought they had been infected through heterosexual sex.
- Of the sample, 11% reported ever being diagnosed with a sexually transmitted infection (STI). More men and fewer Somalis reported ever having an STI. The odds of having an STI increased with the number of lifetime partners.
- The majority (91%) of participants felt their health in the previous year was excellent, very good, or good. Almost half of the sample reported living with a chronic condition at the time they were interviewed. Smokers and those who reported drug use reported poorer general health and were more likely to have a chronic condition.

Health Care Utilization, Screening, and Unmet Need

- The majority (87%) of participants reported they had a family doctor and 93% had contact with at least one health care professional in the previous year, mainly a general practitioner. More women than men saw a general practitioner in the previous year and fewer Ugandans reported having a family doctor.
- In the previous three years, almost all (96%) participants reported having a physical check-up. While 70% of female participants had a Pap smear test in the previous three years, nearly a quarter have never had the test; of those, over half reported ever having sex.
- Over one-quarter of participants felt there had been a time in the previous year when they needed health care but did not receive it. Women were more likely than men to report an unmet need. Of those who reported an unmet need almost one-quarter felt their need was urgent.
- Individuals who did not have a family doctor were more likely to report an unmet health care need compared to those who did have a family doctor. Participants in poorer health were more likely to report an unmet need. Younger and newer immigrants were more likely to report an unmet need. The two most reported reasons for not accessing care when needed were 'waiting time too long' and 'too busy to go'. One-third reported cost as a barrier.

HIV TESTING

Testing History and Behaviour

- The majority (75%) of participants had been tested for HIV with an average of 2.8 tests per person. More men than women reported ever testing and there were community differences in testing rates with Somalis and Ethiopians testing the least. Not only did Somalis have the lowest proportion tested, but those who had tested also tested fewer times.
- Participants who had not had sex were less likely to have been tested for HIV; furthermore, the likelihood of having been tested for HIV increased with the number of sexual partners over a participant's lifetime. More participants who reported a previous STI had been tested.
- Almost two-thirds of testers had been tested as part of the immigration process with more men reporting this than women. Fewer Ethiopian and Somali participants were tested for HIV as part of immigration. One-fifth of participants had been recommended to test by a physician; more women than men received a doctor's recommendation.
- On average, 3.1 years had passed since participants had their last test; women tested more recently than men. Most testers (83%) had their last test in Canada. More time had passed since Somalis had tested compared to others. They were also less likely, along with Tanzanians, to have had their recent test in Canada.
- The majority (60%) of testers had their last test based on a suggestion or requirement; fewer Ethiopians reported this. Seventeen percent of testers tested to ensure they were HIV negative so they could have sex without a condom and 15% thought they might have been exposed to HIV through sexual activity.
- The majority (85%) of non-testers reported they did not test because they felt healthy while 81% did not think they were at risk. Over two-thirds had never thought about getting tested. Over half of non-testers said they would consider testing if they thought they may have been exposed to HIV through sexual activity and 21% would test if they or their partner experienced symptoms.

Testing and Knowledge and Beliefs

- Almost all (94%) participants felt it was very important for people to know their HIV status through testing. However, there was some misinformation concerning HIV testing in Canada. Almost one-third of the sample did not agree that, or did not know if, the results of an HIV test would be kept confidential. Almost three-quarters did not know about anonymous testing; Ethiopians were more aware of anonymous testing than other communities. Furthermore, 16% of participants did not know where to get an HIV test, with those who had been in Canada for 3-19 years most likely to know where to get tested.
- In general, people who provided fewer stigmatizing responses were more likely to have ever tested for HIV and had tested more times and more recently. Also, participants who had tested for HIV had higher HIV knowledge scores and perceived risk.
- Participants who knew an HIV-positive person either in Toronto's East African community or in their home country were more likely to test. Participants with family members who are HIV positive were also more likely to test.

1 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report contains the main results from the East African Health Study in Toronto (EAST). The data is mainly descriptive in order to provide a broad overview of HIV and health-related issues in these communities. Future manuscripts will focus on multivariate analyses and provide more in-depth analysis of particular issues.

1.2 STUDY BACKGROUND

HIV/AIDS has reached epidemic proportions in many regions of the world, most notably in sub-Saharan Africa. Within developed countries there is growing evidence that persons originating from countries where HIV is endemic have higher prevalence of HIV compared to the general population.

Limited evidence suggests that this trend is also true in Canada. According to the 2001 census, only 1.5% of the Canadian population was born in countries where HIV is endemic; however, this group accounted for an estimated 12% of existing HIV cases and 16% of new cases in 2005 [1]. Data from 2006 indicate that, in Ontario, 3.5% of the population was from an African or Caribbean country; yet these communities accounted for an estimated 15.9% of prevalent HIV cases [Remis RS, personal communication, Oct 2008]. Trends indicate HIV prevalence among individuals from countries where HIV is endemic increased 72% from 2001 to 2006 [2]. Furthermore, a preliminary analysis suggested that cumulatively 22-59% of HIV-positive individuals from these countries had contracted the virus after arriving in Canada [3].

Despite this evidence, there is a dearth of knowledge with respect to health issues in general, and HIV in particular, in these communities. To date, there have been no Canadian socio-epidemiologic studies in communities from African countries where HIV is endemic. However, research in other immigrant communities has highlighted social and structural barriers (e.g., language, unemployment) to available health and social resources. Additionally, studies that measure HIV prevalence are crucial for improving the accuracy of HIV statistics in Ontario, as these are currently compiled through modelling of incomplete data from testing sites.

In response to this knowledge gap, a research team led by Wangari Tharao and Liviana Calzavara conducted a feasibility study in 1999 in cooperation with the five largest East African communities in Toronto: Ethiopian, Kenyan, Somali, Tanzanian, and Ugandan. Researchers interviewed key community representatives and held focus group discussions with 45 community members. These discussions documented particular concerns of the communities and informed the development of EAST.

1.3 STUDY OBJECTIVES

EAST was designed to address the lack of information on HIV in communities from countries where HIV is endemic, specifically those from East Africa (Ethiopia, Kenya, Somalia, Tanzania, and Uganda). The main objective of the study was to conduct the first epidemiologic study of HIV-related knowledge, attitudes, and behaviour, and to determine HIV prevalence. Specific objectives included:

1) To assess knowledge and sources of information for HIV/AIDS
2) To describe risk factors and behaviour related to HIV
3) To measure the prevalence of health-related problems, including HIV infection
4) To measure attitudes towards, and use of, health care services and health screening
5) To characterize the relationships between attitudes, knowledge, and risk behaviour, and HIV infection, other health problems, and use of health-related services

1.4 COMMUNITY PARTNERSHIPS

The study was carried out by the HIV Social, Behavioural, and Epidemiological Studies Unit (HIV Studies Unit), at the Dalla Lana School of Public Health, University of Toronto. The HIV Studies Unit has a wealth of experience conducting HIV-related socio-behavioural research and has conducted studies in ethno-cultural communities over the past 15 years, including the first socio-epidemiologic study in First Nation communities [4], a qualitative study examining stigma, denial, and discrimination in six African and Caribbean communities [5], and the EAST Phase I needs assessment study [6]. Wangari Tharao, the co-principal investigator on the study, African and Caribbean Council on HIV/AIDS in Ontario co-chair, and active community member, guided the team in matters relating to developing strong relationships with community partners. The HIV Studies Unit also formed a partnership with the African and Caribbean Council on HIV/AIDS in Ontario (ACCHO) that encouraged consistent, equitable, and meaningful collaboration.

The community-academic relationship was enhanced through the creation of a community advisory committee (CAC), which played a major role in the research process. To ensure broader representation from each of the communities, the CAC formed five community working groups (CWGs) that provided advice and support to the CAC on community specific issues. The majority of CAC and CWG members were initially not involved with HIV/AIDS issues and through involvement in this study have had the opportunity not only to address these issues and take them forward in their respective communities, but to develop links with others involved in the HIV/AIDS field.

2 METHODS AND ANALYSIS

A population-based, cross-sectional survey was employed to collect a wide range of health and HIV-related information. Interviews were conducted between November 2004 and December 2006. The study also included an optional saliva collection component to assess rates of HIV infection in the sample.

2.1 ELIGIBILITY CRITERIA

Participation in EAST was restricted to men and women who were 16 years of age or older, identified as being from one of the communities (Ethiopian, Kenyan, Somali, Tanzanian, and Ugandan), lived in the Greater Toronto Area (GTA), and were fluent in English. The target sample size was 500 participants (100 from each community).

2.2 RECRUITMENT

The recruitment plan was developed in collaboration with the CAC who in turn enlisted the input of community members through the CWGs. Recruitment posters and postcards were distributed throughout the communities and advertisements and/or editorials were placed in local community newspapers.

Based on community consultations, the research team initially intended to develop the sampling frame through existing membership lists from community organizations, supplemented with names located through electronic and telephone directories. However, it became apparent that such lists and directories were difficult to locate, outdated, and/or their access was limited/restricted by confidentiality.

As a result, the research team created a sampling frame using a variety of methods including: 1) canvassing community and social events, public venues, and community organizations, 2) snowballing techniques through personal contacts of participants, community recruiters, and working group members, and 3) some use of community organizations' membership and third-party lists.

Collected names were initially placed on five master sampling frames, one for each community, with the intention of randomly choosing individuals to contact. Two main challenges prevented this approach. First, any delay between initial contact with individuals in the community and booking the interview often resulted in outdated contact details and/or participants forgetting about agreeing to be contacted for the study. Second, limited monetary and staff resources prevented building a sampling frame large enough to randomly select the required number of participants. To address these issues, study staff attempted to contact every individual in the sampling frame.

2.3 SURVEY INSTRUMENT

A structured survey instrument was developed by the research team through the compilation and adaptation of several existing tools, including questions from the *Canadian Community Health Survey*, the *Ontario First Nations AIDS and Health Lifestyle Survey*, and the *Pathways and Barriers to Mental Health Care for Ethiopians in Toronto* study. The survey collected information on issues of immigration and mobility, health status, social support, health care utilization, health behaviours, sexual behaviour, HIV testing, and knowledge and attitudes related to HIV/AIDS.

Given the sensitive nature of particular questions, great care and consideration were given to the development of the survey instrument. Literature on maximizing the reliability and validity of sexual behaviour questions was consulted and great attention was given to ensure questions were clear and culturally appropriate. While most of the information was collected by an interviewer, the survey included a self-completed portion to obtain sexual behaviour information. The purpose of this self-completed technique was to maximize the reliability of responses to sensitive questions [7-8].

Findings from the pre-test with 25 individuals were used to modify interview questions.

2.4 INTERVIEW ADMINISTRATION

The survey was administered by means of a confidential face-to-face interview with one of 17 interviewers, 13 of whom were from East Africa or another African country. The average duration of the interview was 68.5 minutes (median 68, range 30-150 minutes). Participants received $15, an HIV information pamphlet, and contact information for various service organizations.

2.4.1 CHOICE OF INTERVIEWER

All participants and interviewers were gender-matched and participants were given a choice of interviewer according to ethnocultural community (i.e., from the participant's own community, another African community, or non-African). Twenty-three percent (107/456) of the study sample were interviewed by someone from their own country, 63% (288/456) by another African, and 13% (61/456) by a non-African. At the end of the interview, participants were asked if they would have chosen the same type of interviewer. Only three participants (0.7% of the sample) said they would not have made the same choice regarding the ethnocultural origin of interviewer, and all three stated that they would have preferred to be interviewed by someone from their own community. It is worth noting that almost one-third (32%, 145/456) of participants had no preference for type of interviewer.

2.4.2 Location of Interview

To encourage higher participation rates, participants were given a choice of location to be interviewed (i.e., University of Toronto, private community location, or participant's home). Forty-two percent (192/456) of the interviews were conducted in participants' homes, 41% (187/456) at an organization or business in the community, and 16% (71/456) at the University of Toronto. Women were more likely than men to be interviewed at home (50% vs. 34%, $p<0.001$).

2.4.3 Reliability of Interview

Interviewers were asked to assess participants' understanding of the questions and reliability of their answers. Although the interviewers reported that 11% (52/456) of participants had some difficulty answering questions, interviewers felt that almost all the participants (99%, 450/453) provided reliable answers.

2.4.4 Self-Completed Section

Interviewers were encouraged to read each question in the self-completed section out loud and have the participants record their responses on a separate sheet. Participants could read the questions on their own if they expressed a preference.

Sixty-eight percent (285/419) of the participants who completed the separate sexual behaviour portion had questions read to them by the interviewer but completed the questions on their own, 31% (129/419) self-completed entirely, and 1% (5/419) had the interviewer read the question as well as record the response. More women than men read and answered the questions on their own (60% vs. 40%, $p<0.0001$).

2.5 SALIVA TESTING

2.5.1 Uptake of Saliva Testing

To obtain estimates of HIV infection, the study included an optional HIV testing component. Study participants were asked if they would be willing to provide an anonymous saliva specimen for HIV testing.

Over three-quarters (76%, 347/456) of participants provided a saliva sample. Participants who declined were asked to provide reasons for not wanting to provide a saliva sample. Almost a quarter (23%, 23/102) of those who did not provide a saliva sample did not provide the sample because they felt the test was unnecessary, and of those, the majority (61%, 14/23) specified that it was unnecessary because they knew or felt they were HIV-negative. Five people said it was unnecessary because they knew they were HIV positive. It is also noteworthy that 18% (18/102) did not provide the sample because they did not like the saliva collection process. Concerns regarding confidentiality

or privacy issues were cited by 12% (12/102); 9% (9/103) did not provide the sample because they would not receive the results.

2.5.2 HIV ANTIBODY TESTING

Saliva was collected using SalivaSampler™ and was stored in a refrigerator until sent to the HIV Laboratory, Ontario Ministry of Health and Long-Term Care, for testing. Saliva specimens were tested for HIV antibodies using the Biochem Detect HIV v 1. (BioChem Pharma, Montreal). Reactive specimens were confirmed using Vironostika HIV1 Micro Elisa system – Biomerieux (Organon Teknika). Data from the interview was linked to the saliva sample with a unique and anonymous code.

2.6 ETHICS AND CONFIDENTIALITY

The study was reviewed and approved by the University of Toronto's Research Ethics Board. Participation in the study was voluntary, confidential, and anonymous. Informed consent was obtained from all research participants. Several measures were taken to protect participant confidentiality. Numeric identification codes, rather than participant names, were used on the questionnaires and saliva specimens. The saliva samples were linked to the interview data by the non-nominal identification codes. Oral, rather than written, consent was obtained in order to eliminate the need for participant signatures and names. Completed surveys were stored in a locked cabinet at the study office. All electronic databases and computerized information were password protected. Interviewers and study staff signed oaths of confidentiality.

2.7 DATA ANALYSIS

This report presents a summary of the EAST data. All key variables and/or outcomes were examined using 1) descriptive univariate analysis (frequencies, averages, medians, ranges, and standard deviations) and 2) bivariate statistics exploring gender and community differences.[1] In addition to gender and community analyses, other bivariate analyses were conducted when deemed appropriate. Crude, unadjusted comparisons between groups were conducted using chi-square tests, Fisher's exact tests, t-tests, or one-way ANOVA and their nonparametric equivalents, as appropriate. The traditional p-value of 0.05 was used for significance testing and 95% confidence intervals were reported. Statistical analyses were conducted using SAS 9.1 software (SAS Institute Inc., Cary, NC, 2002-2003).

[1] Although all key variables were examined by gender and community, only statistically significant results have been reported.

3 RESULTS

3.1 SAMPLE CHARACTERISTICS

3.1.1 GENERAL SOCIO-DEMOGRAPHICS

3.1.1.1 Community and Gender

Recruitment efforts resulted in nearly equal numbers of participants across four of the communities, but fewer Tanzanians were recruited. Half of the participants (50%, 230/456) were female. Gender distribution did not differ significantly between communities (Table 1).

Table 1. Gender and community distribution of study sample

	Number of participants (%)					
Community	**Women**		**Men**		**Total**	
Ethiopian	50	(50%)	50	(50%)	100	(22%)
Kenyan	50	(50%)	50	(50%)	100	(22%)
Somali	50	(50%)	50	(50%)	100	(22%)
Tanzanian	29	(53%)	26	(47%)	55	(12%)
Ugandan	51	(50%)	50	(50%)	101	(22%)
Total	**230**	**(50%)**	**226**	**(50%)**	**456**	**(100%)**

3.1.1.2 Age

The average age of participants was 34.5 years (median 34, range 16-71). Age distribution did not vary significantly between communities (Table 2). Men were slightly older than women (36.3 vs. 32.8, $p<0.001$).

Table 2. Age distribution of study sample (by community)

		Age		
Community	**N**	**Average**	**Median**	**Range**
Ethiopian	99	34.2	33	16-64
Kenyan	97	35.6	36	16-66
Somali	100	34.5	34	17-71
Tanzanian	54	34.2	35	17-62
Ugandan	100	34.0	32	18-56
Total	**450[a]**	**34.5**	**34**	**16-71**

[a] 6 participants did not provide date of birth.

3.1.1.3 Religion and Faith

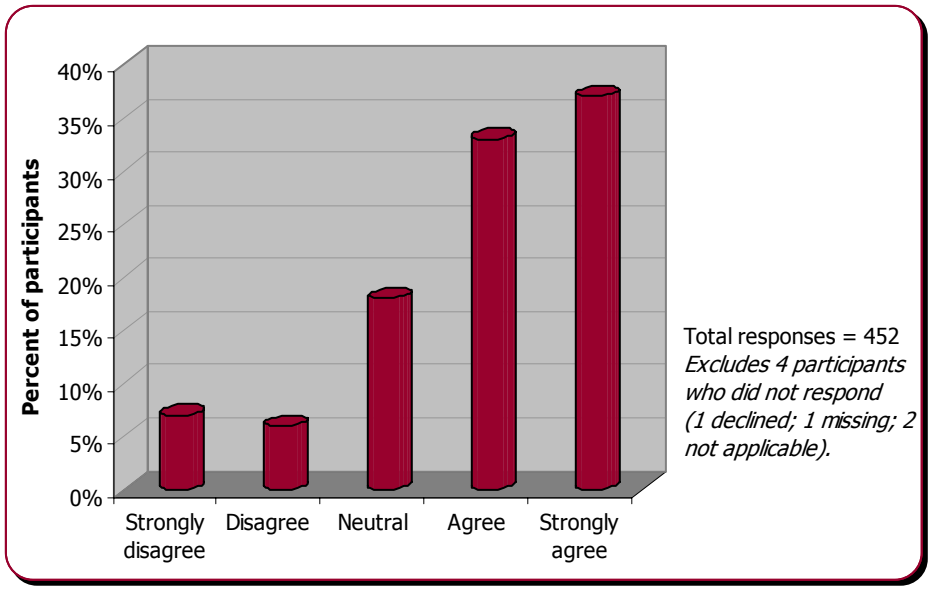
Over half of the sample (59%, 271/456) reported they were Christian, 37% (170/456) were Muslim, 2% (9/456) were agnostic or did not have a faith, and 1% (6/456) were of another faith. Almost all Somalis were Muslim, while the majority in the other communities were Christian (Table 3).

Religion was important to participants, with 69% (313/452) of the sample indicating that their religious beliefs were 'the foundation of their whole approach to life' (Figure 1).

Table 3. Religion or faith (by community)

(N=456) Community	Percent of participants (n)					
	Christian		Muslim		Other	
Ethiopian	78%	(78)	21%	(21)	1%	(1)
Kenyan	66%	(66)	24%	(24)	10%	(10)
Somali	1%	(1)	98%	(98)	1%	(1)
Tanzanian	60%	(33)	36%	(20)	4%	(2)
Ugandan	92%	(93)	7%	(7)	1%	(1)
Total	**59%**	**(271)**	**37%**	**(170)**	**3%**	**(15)**

Figure 1. Percent of participants who felt that religious beliefs were the foundation of their whole approach to life



3.1.1.4 Language

Almost all participants reported they spoke (99%, 452/456) and read (98%, 447/456) English. The average number of languages fluently spoken by participants was 2.7 (median 3.0, range 1-6) and read was 2.5 (median 2.0, range 0-6). See Table 4 for a list of languages spoken.

Table 4. Languages fluently spoken and read by participants

(N=456)	Percent of participants (n)			
Language	**Spoken**		**Read**	
English	99%	(452[b])	98%	(447[a])
Swahili	46%	(208)	40%	(181)
Somali	25%	(114)	21%	(95)
Amharic	20%	(90)	18%	(81)
Luganda	19%	(85)	18%	(82)
Arabic	10%	(47)	9%	(42)
French	9%	(42)	8%	(38)
Other[b]	36%	(163)	30%	(139)

[a] 4 participants reported not speaking English fluently; 9 reported not reading English fluently.
[b] Over 50 other languages were reported.

3.1.1.5 Housing Status and Household Composition

The majority of participants (60%, 274/455) reported living in an apartment or condominium and 38% (174/455) reported living in a house (Table 5). Nearly three-quarters (74%, 336/455) were living in rental accommodations and approximately a quarter (26%, 117/455) were living in a home owned by them or a family member (Table 6). Ethiopians and Tanzanians were most likely to own and Ugandans were most likely to rent. These differences were partially explained by household income.

Participants' households contained an average of 3.5 people (range 1-10) (Table 7). On average, Somalis had more people per household than all other communities ($p<0.05$), with half of all Somalis reporting 5 or more people in their household. Compared to other communities, Ethiopians were more likely to live alone ($p<0.01$). More men than women reported living alone (24% vs. 10%, $p<0.0001$).

Of the sample, 41% (186/456) lived with their children, 36% lived with their spouse or common-law partner, and 16% lived with one or more parent (Table 8). The average number of children in each household was 2.4 (median 2, range 1-8). More women than men reported living with children (47% vs. 35%, $p<0.05$).

Table 5. Type of dwelling

Type	Percent of participants (n)	
Apartment/condominium	60%	(274)
House	38%	(174)
Other	2%	(7)
Total	**100%**	**(455[a])**

[a] 1 participant did not respond (missing).

Table 6. Ownership of dwelling

Owned by	Percent of participants (n)	
Self/spouse	19%	(85)
Family member	7%	(32)
Renting	74%	(336)
Other	<1%	(2)
Total	**100%**	**(455[a])**

[a] *1 participant did not respond (missing).*

Table 7. Number of people in household (by community)

Community	Average number of people in household (range)[a]		Percent of participants (n) who live…			
			alone		in household of 5+	
Ethiopian	2.9	(1-9)	31%	(31/100)	16%	(17/100)
Kenyan	3.5	(1-7)	12%	(12/100)	28%	(28/100)
Somali	4.4	(1-10)	13%	(13/100)	50%	(50/100)
Tanzanian	3.5	(1-9)	13%	(7/55)	24%	(13/55)
Ugandan	3.0	(1-7)	16%	(16/101)	16%	(16/101)
Total	**3.5**	**(1-10)**	**17%**	**(79/456)**	**27%**	**(124/456)**

[a] *Number of people in household including the participant.*

Table 8. Household composition

(N=456) Participant lives with	Percent of participants (n)	
Spouse	36%	(162)
Husband/wife	32%	(147)
Common-law partner	3%	(15)
Same-sex partner	0%	(0)
Parent (birth/adoptive/step)	16%	(72)
Father	8%	(37)
Mother	16%	(71)
Children	41%	(186)
Biological	40%	(181)
Step	2%	(8)
Foster/adopted	<1%	(2)
Other relatives	23%	(107)
Siblings	17%	(78)
Grandparents	1%	(5)
Grandchildren	1%	(4)
In-laws	1%	(6)
Other relatives	7%	(34)
Unrelated	20%	(90)

3.1.2 Socio-Economic Status

3.1.2.1 Education

Almost three-quarters (73%, 332/456) of the participants had attended college or university[2] (Table 9). Fewer Somali participants had attended post-secondary schools compared to other communities (49% vs. Ethiopian 73%, Kenyan 84%, Tanzanian 76%, Ugandan 84%, p<0.0001). The most common fields of study[3] were 1) social sciences, education, government service, and religion (32%); 2) business, finance, and administration (27%); and 3) natural and applied sciences (23%; Table 10).

Table 9. Highest level of education

Highest level of education attained	Percent of participants (n)	
Completed elementary or less	2%	(7)
Some secondary[a]	6%	(27)
Completed secondary	20%	(89)
Some college/university[b]	15%	(69)
Completed college (including trades)	23%	(106)
Bachelor's or above	35%	(157)
Total	**100%**	**(455[c])**

[a] *Includes participants currently attending secondary school.*
[b] *Includes participants currently attending college/university.*
[c] *1 participant did not respond (declined).*

Table 10. Field of post-secondary education

(N=332) Field of study[a]	Percent of participants (n)	
Social science, education, government service, and religion	32%	(107)
Business, finance, and administration	27%	(89)
Natural and applied sciences and related fields	23%	(75)
Health	8%	(27)
Art, culture, recreation, and sport	7%	(23)
Sales and service	2%	(8)
Trades, transport and equipment operators, and related fields	2%	(6)
Primary industry	1%	(2)
Processing, manufacturing, and utilities	<1%	(1)
Vague response	<1%	(1)

[a] *More than one answer possible.*

[2] Although participants were not specifically asked if they were currently attending school, based on responses to other survey questions it was determined that at least 16 to 18 participants were currently in high school and at least 21 were currently in college/university.
[3] Fields of study categories were adapted from 'skill type' categories used in the National Occupational Classification System (NOC 2001). The NOC was developed and maintained by Human Resources and Social Development Canada (HRSDC) (http://www5.hrsdc.gc.ca/NOC-CNP).

3.1.2.2 Employment and Occupation

The majority of participants (86%, 393/455) had worked at a job or business in the previous year and 70% (318/455) worked in the past week. More men worked in the previous year compared to women (90% vs. 83%, $p<0.05$), as well as in the past week (89% vs. 72%, $p<0.0001$). The most frequently reported reason for not working in the past week was educational leave (Table 11). More women reported that their primary reason for not working was illness or disability (16% vs. 9%, $p<0.05$), no work permit (13% vs. 7%, $p<0.05$), and child care (11% vs. 0%).

The most commonly reported occupation type was sales and service (Table 12). More men reported working in natural and applied sciences, art and culture, trades, transportation and equipment operation, and primary industries. More women worked in health, social sciences and education, and sales and service. Somalis were more likely to work in trades, transportation, and equipment operation (22% vs. Ethiopian 6%, Kenyan 5%, Tanzanian 11%, Ugandan 9%, $p<0.01$).

Table 11. Reasons for not working in past week (by gender)

Reason	Percent of participants (n)		
	Women	Men	Total
School/education leave	24% (21)	43% (19)	30% (40)
Illness/disability[a]	16% (14)	9% (4)	14% (18)
No work permit/SIN[a]	13% (12)	7% (3)	11% (15)
Looking for work/can't find job	8% (7)	9% (4)	8% (11)
Pregnancy	12% (11)	0% (0)	8% (11)
Caring for children[b]	11% (10)	0% (0)	8% (10)
Vacation	2% (2)	5% (2)	3% (4)
Had seasonal/temporary employment	2% (2)	7% (3)	4% (5)
Retired	0% (0)	7% (3)	2% (3)
Other personal/family responsibilities	2% (2)	0% (0)	2% (2)
Recently hired but has not started yet	1% (1)	2% (1)	2% (2)
Other reasons	6% (5)	9% (4)	7% (9)
Vague responses	2% (2)	2% (1)	2% (3)
Total	**100% (89)**	**100% (44)**	**100% (133[c])**

Significant gender difference: [a] $p<0.05$, [b] $p<0.01$.
[c] 4 people did not respond.

Table 12. Occupation type (by gender)

Skill type[a]	Percent of participants (n) Women (n=183)	Men (n=198)	Total (n=381[b])
Sales and service occupations[c]	34% (63)	25% (49)	28% (112)
Occupations in social science, education, government service and religion[d]	23% (43)	10% (19)	16% (62)
Business, finance and administration occupations	18% (33)	13% (25)	15% (58)
Trades, transport and equipment operators and related occupations[e]	1% (2)	19% (38)	10% (40)
Natural and applied sciences and related occupations[e]	1% (1)	16% (31)	8% (32)
Health occupations[e]	13% (24)	2% (4)	7% (28)
Occupations unique to processing, manufacturing and utilities	6% (11)	6% (11)	6% (22)
Occupations in art, culture, recreation and sport[c]	2% (3)	6% (12)	4% (15)
Occupations unique to primary industry	0% (0)	1% (2)	1% (2)
Too vague to classify	4% (8)	5% (9)	4% (17)

[a] More than one answer possible.
[b] 12 people did not respond (1 declined; 11 missing).
Significant gender difference: [c] p<0.05, [d] p<0.001, [e] p<0.0001.

3.1.2.3 Income

The median annual personal income[4] was approximately $22,000 (Table 13). More than twice as many women reported an annual income of less than $10,000 (39% vs. 17%, p<0.0001). Compared to other communities, more Somalis and Ugandans reported an annual personal income of less than $30,000 (79% and 71% vs. Ethiopian 54%, Kenyan 56%, Tanzanian 60%, p<0.01), while a higher proportion of Kenyans reported earning more than $50,000 (22% vs. Ethiopian 13%, Somali 7%, Tanzanian 13%, Ugandan 6%, p<0.01).

The median annual household income was approximately $38,000 (Table 14). Forty-two percent of participants reported a household income below the Low Income Cut-Off index[5] (LICO). Compared to men, a higher proportion of women reported not knowing

[4] Annual personal income, before taxes and deductions, from all sources in the past 12 months (includes part-time work and students).
[5] Low income cut-offs (LICOs) are income thresholds below which families will devote a larger share of income to necessities (i.e. food, shelter, etc). LICOs take into account family size. Source: Statistics Canada, Income Statistics Division. (May 2007). Low Income Cut-offs for 2005 and Low Income Measures for 2004 (available at http://www.statcan.ca/english/pub/index.htm).

their household income (14% vs. 2%, p<0.0001). Compared to other communities, more Ugandans lived in households with incomes below the LICO (63% vs. Ethiopian 35%, Kenyan 39%, Somali 48%, Tanzanian 43%, p<0.01).

Table 13. Total personal annual income

Income	Percent of participants (n)	
Less than $5,000	15%	(66)
$5,000 - $9,999	15%	(63)
$10,000 - $19,999	17%	(74)
$20,000 - $29,999	16%	(71)
$30,000 - $39,999	16%	(67)
$40,000 - $49,999	9%	(37)
$50,000 - $59,999	6%	(26)
$60,000 - $69,999	3%	(12)
$70,000 - $79,999	2%	(7)
$80,000 or more	2%	(8)
Total	**100%**	**(431[a])**

[a] *25 participants did not respond (3 missing; 13 declined; 9 did not know).*

Table 14. Total household annual income

Income	Percent of participants (n)	
Less than $5,000	5%	(20)
$5,000 - $9,999	9%	(38)
$10,000 - $19,999	13%	(51)
$20,000 - $29,999	16%	(64)
$30,000 - $39,999	14%	(58)
$40,000 - $49,999	9%	(38)
$50,000 - $59,999	5%	(22)
$60,000 - $69,999	5%	(22)
$70,000 - $79,999	8%	(34)
$80,000 or more	14%	(58)
Total	**100%**	**(405[a])**

[a] *51 participants did not respond (3 missing; 13 declined; 35 did not know).*

3.1.3 Immigration and Mobility

3.1.3.1 Region of Birth and Mobility

Almost all (93%, 426/456) of the sample was born in East Africa, 3% (15/456) in Canada, the United States, or Europe, and 3% (15/456) in other countries. Of those born outside of Canada, over three-quarters (76%, 337/446) lived in Africa for the entirety of their adolescent years (age 10-16), and an additional 11% (47/446) spent at least part of their adolescent years in Africa. Before coming to Canada, 43% (191/447) were living outside their country of birth and 92% (412/446) were living in an urban area. More Somalis and Ethiopians were living outside their country of birth before coming to Canada (79% and 57% vs. Kenyan 22%, Tanzanian 24%, and Ugandan 23%, p<0.0001).

Over half (52%, 235/456) have travelled outside of North America since arrival in Canada and 43% (193/450) have travelled to sub-Saharan Africa (Table 15). Ethiopians were more likely to have travelled to sub-Saharan Africa (57% vs. Kenyan 46%, Somali 38%, Tanzanian 36%, Ugandan 32%, p<0.01).

Table 15. Travel outside of North America after coming to live in Canada (by community)

Community	Percent of participants (n) who travelled...			
	Outside of North America[a]		To sub-Saharan Africa[b]	
Ethiopian	63%	(63/100)	57%	(57/100)
Kenyan	56%	(56/100)	47%	(46/98)
Somali	58%	(58/100)	39%	(38/98)
Tanzanian	42%	(23/55)	37%	(20/54)
Ugandan	35%	(35/101)	32%	(32/100)
Total	**52%**	**(235/456)**	**43%**	**(193/450[c])**

Significant community differences: [a] p<0.001, [b] p<0.01.
[c] 6 participants did not respond (6 missing).

3.1.3.2 Immigration Status

Of participants who immigrated to Canada, 43% (191/441) arrived in Canada as permanent residents, 36% (158/441) arrived as refugee claimants, and 21% (91/441) arrived with temporary visas. Only one participant reported having no status.

At the time of the interview, the majority of the sample (84%, 378/452) had permanent immigration status and 12% (54/452) were refugees or refugee claimants (Table 16). Of the 19 participants who held temporary visas (i.e., work, student, or visitor), nine had applied for permanent status. Of those with permanent status, 47% (161/340) acquired their status via refugee or humanitarian applications, 35% (119/340) were sponsored by family, and 15% (51/340) were economic immigrants.

Ethiopians and Somalis were most likely to have had permanent immigration status compared to other communities (Table 17). This difference appears to be due to length of residence in Canada. Somalis were more likely to have had refugee status[6] compared to other communities (64% vs. Ethiopian 31%, Kenyan 38%, Tanzanian 16%, Ugandan 49%, p<0.0001). More men than women had permanent status (87% vs. 80% of women, p<0.05).

[6] Refugee status includes people who are currently refugees, as well as citizens and permanent residents who reported that they acquired their current status via refugee status.

Table 16. Current immigration status

Status	Percent of participants (n)	
Canadian citizen[a]	57%	(256)
Landed/permanent	27%	(122)
Refugee	6%	(29)
Refugee claimant	6%	(25)
Temporary work papers	2%	(7)
Visitor	1%	(4)
Student	2%	(8)
No status	<1%	(1)
Total	**100%**	**(452[b])**

[a] Includes 9 participants who were born in Canada.
[b] 4 participants did not respond (3 declined; 1 missing).

Table 17. Permanent immigration status (by community)

Community[a]	Percent of participants with permanent status (n)	
Ethiopian	95%	(95/100)
Kenyan	78%	(78/100)
Somali	97%	(97/100)
Tanzanian	83%	(44/53)
Ugandan	65%	(64/99)
Total	**84%**	**(378/452[b])**

[a] Significant community differences, p<0.0001.
[b] Includes 9 participants who were born in Canada; 4 participants did not respond (3 declined; 1 missing).

3.1.3.3 Length of Residence in Canada

Participants had been living in Canada for an average of 10.3 years[7] (median 10, range 0-44 years; Table 18), with 30% (133/446) having lived in Canada for less than 5 years.

Ethiopians and Somalis have, on average, been in the country longer than other communities (13.7 and 12.8 years vs. Kenyans 8.8, Tanzanians 7.4, and Ugandans 6.2, p<0.0001) (Table 19).

Table 18. Length of residence in Canada

Length of residence	Percent of participants (n)	
0-4 years	30%	(133)
5-9 years	20%	(87)
10-14 years	19%	(83)
15-19 years	26%	(114)
20 or more years	7%	(29)
Total	**100%**	**(446[a])**

[a] Excludes 9 participants born in Canada; 1 participant did not respond (missing).

[7] This does not include the nine participants born in Canada.

Table 19. Length of residence in Canada (by community)

Community[a]	N	Length of residence in Canada (years)		
		Average	Median	Range
Ethiopian	95	13.7	14	1-31
Kenyan	98	8.8	7	0-44
Somali	99	12.8	14	2-23
Tanzanian	54	7.4	5	0-25
Ugandan	100	6.2	4	0-24
Total	**446[b]**	**10.3**	**10**	**0-44**

[a] *Significant community differences, p<0.0001.*
[b] *Excludes 9 participants born in Canada; 1 participant did not respond (missing).*

3.1.4 FAMILY AND SOCIAL SUPPORT NETWORKS

3.1.4.1 Marital Status

Nearly half of the sample was single (46%, 209/456), 41% (185/456) were married or in common-law relationships, 11% (54/456) were separated or divorced, and 2% (7/456) were widowed. Of those who were not married or in common-law relationships, 43% (115/269) reported having a boyfriend, girlfriend, or fiancé. Somalis were least likely to report having a boyfriend, girlfriend, or fiancé (25% vs. Ethiopian 48%, Kenyan 54%, Tanzanian 39%, Ugandan 47%, p<0.05). More men than women reported having a girlfriend, boyfriend, or fiancé (53% vs. 34%, p<0.01).

3.1.4.2 Ethnicity and Location of Partner

The majority of those in a regular relationship (i.e., married, in a common-law relationship, or had a girlfriend, boyfriend, or fiancé) had a partner from an African country (84%, 250/298), while 5% (14/298) reported their regular partner was from a Caribbean country and 5% (14/298) reported their partner was 'Canadian'. Almost three-quarters (73%, 218/298) of those in a relationship were with a partner from the same ethnic background. Eighteen percent (55/300) of the regular partners were currently living outside of Canada and 72% (40/55) of those were living in East Africa.

Among married and common-law participants, 94% had an African partner, and 84% had a partner from the same country; however among those who were single, divorced, separated, or widowed who reported having a boyfriend, girlfriend, or fiancé, 68% had an African partner and 56% had a partner from the same country (p<0.0001). Fewer men than women with regular partners reported their partner was from an African country (80% vs. 89%, p<0.05). Ugandans had a lower proportion of partners in Canada compared to other communities (Table 20).

Table 20. Location of regular partner (by community)

(N=298[a]) Community	Percent of participants (n) with regular partner in... Canada[b]		East Africa[b]		Other country	
Ethiopian	88%	(57/65)	9%	(6/65)	3%	(2/65)
Kenyan	79%	(60/76)	16%	(12/76)	5%	(4/76)
Somali	92%	(48/52)	4%	(2/52)	6%	(3/52)
Tanzanian	87%	(33/38)	11%	(4/38)	3%	(1/38)
Ugandan	67%	(45/67)	25%	(17/67)	7%	(5/67)
Total	**81%**	**(242/298)**	**13%**	**(40/298)**	**5%**	**(15/298)**

[a] *2 participants did not respond (2 missing).*
[b] *Significant community differences, p<0.01.*

3.1.4.3 Number of Children

Over half the sample (54%, 245/254) had biological children (i.e., women had given birth and men fathered a child) and 4% reported that either they or their partner were currently pregnant. Of those who had children, participants reported having an average of 2.7 biological children (Table 21). Somalis had more children, on average, than all other communities.

Table 21. Number of biological children (by community)

Community[a]	N	Number of children Average	Median	Range
Ethiopian	40	2.0	2	1-4
Kenyan	58	2.3	2	1-5
Somali	47	4.1	4	1-8
Tanzanian	30	2.4	2	1-5
Ugandan	63	2.3	2	1-6
Total	**238[b]**	**2.7**	**2**	**1-8**

[a] *Significant community differences, p<0.0001.*
[b] *Excludes participants with no children; 7 participants did not respond (7 missing).*

3.1.4.4 Social Networks in Greater Toronto Area (GTA)

Almost three-quarters (73%, 332/456) of the sample had at least one family member in the Greater Toronto Area (GTA) and 94% had at least one close friend in the GTA (Table 22). Higher proportions of Ethiopians and Somalis reported two or more close family members in the GTA (64% and 72% vs. Kenyan 49%, Tanzanian 45%, Ugandan 36%, p<0.0001). After accounting for the number of years participants had been living in Canada, the community differences remained statistically significant (p<0.05). There were no gender differences in number of close family members, but fewer women than men reported having 10 or more close friends (5% vs. 12%, p<0.01). Only 5% (12/456) of participants reported not having any close friends or family in the GTA.

Table 22. Number of family members and friends in Greater Toronto Area

Number of family/friends	Percent of participant (n) with...			
	Family members in GTA		Friends in the GTA	
0 people	27%	(124)	7%	(32)
1 person	19%	(86)	11%	(49)
2-4 people	36%	(163)	56%	(255)
5-9 people	11%	(51)	18%	(81)
10 or more people	7%	(32)	9%	(39)
Total	**100%**	**(456)**	**100%**	**(456)**

3.1.4.5 Time Spent with Community

Participants were asked how often they spend time with members of their own community, excluding time spent with family members at home. Thirty-five percent (161/456) spent all or most of their time with other members from their community, 61% (277/456) spent some of their time with other community members, and 4% (18/456) spent no time with their community. More Ethiopians and Somalis reported spending most or all of their time with other community members (46% and 55% vs. Kenyan 27%, Ugandan 25%, Tanzanian 15%, $p<0.05$).

3.2 KNOWLEDGE, ATTITUDES, AND BELIEFS ABOUT HIV AND OTHER HEALTH ISSUES

3.2.1 KNOWLEDGE

3.2.1.1 Nature of HIV

Participants were asked whether they agreed or disagreed with three statements concerning the nature of HIV/AIDS and its treatment (Table 23). Almost all participants agreed that HIV/AIDS is a sickness that attacks the immune system (95%, 434/455), there are medications that allow people with HIV to live longer (95%, 430/455), and there is no cure for HIV (87%, 397/454). Fewer Somalis agreed that there are medications that allow people to live longer (85% vs. Ethiopian 98%, Kenyan 96%, Tanzanian 95%, Ugandan 99%, p<0.0001).

Table 23. Knowledge and beliefs about HIV/AIDS

Statement	Percent of participants (n) who... Disagreed	Agreed	Did not know
HIV/AIDS is a sickness that attacks the immune system[a]	1% (3/455)	95% (434/455)	4% (18/455)
There is a cure for HIV/AIDS[b]	87% (397/454)	7% (30/454)	6% (27/454)
There are medications that allow a person infected with HIV to live longer[a]	2% (7/455)	95% (430/455)	4% (18/455)

[a] 1 participant did not respond (1 missing).
[b] 2 participants did not respond (2 missing).

3.2.1.2 HIV Transmission

Participants were asked 10 questions (true or false) concerning HIV transmission[8] (Table 24). Overall, transmission knowledge was high, with an average score of 8.5 (median 9, range 3-10). People who reported having had sex had higher knowledge scores than those who had never had sex (8.4 vs. 7.8, p<0.05).

Almost all participants knew that HIV was transmitted through unprotected sex and sharing needles, although only 72% knew HIV could not be transmitted through the sharing of utensils and 67% knew it could not be transmitted through a mosquito bite. While 83% knew HIV can be transmitted during childbirth, only 49% knew that HIV could also be transmitted through breastfeeding.

[8] HIV transmission knowledge scores were calculated as the number of correct responses out of 10.

There were no gender differences in overall scores; however more males were aware that mosquito bites could not transmit HIV (77% vs. 58%, p<0.0001) and more females were aware that HIV could be transmitted through breastfeeding (57% vs. 41% p<0.0001) and blood transfusions (97% vs. 83%, p<0.0001).

Average scores differed across communities, with Somali participants having the lowest average score. Community differences were found for specific items relating to blood transfusion, sharing utensils, mosquito bites, and breastfeeding.

Table 24. HIV transmission knowledge (by community)

Statement: A person can get HIV/AIDS from...	Percent of participants responding correctly[a]					
	Ethiopian (n=100)	Kenyan (n=100)	Somali (n=100)	Tanzanian (n=55)	Ugandan (n=101)	Total (n=456)
Unprotected sex with HIV-positive person	100%	100%	97%	100%	99%	**99%**
Sharing needles for drugs with HIV-positive person	99%	100%	99%	100%	99%	**99%**
Sharing needles for ear piercing with HIV-positive person	96%	95%	96%	96%	99%	**96%**
Blood transfusion[b]	95%	97%	72%	93%	95%	**90%**
Shaking hands with HIV-positive person[c]	97%	98%	91%	98%	96%[c]	**96%[c]**
Attending school with HIV-positive person[c]	95%	94%	92%	93%	98%	**95%**
Sharing plate/fork/glass with HIV-positive person[b,c]	71%	78%	56%	65%	88%	**72%**
Mosquito bite[b,c]	54%	73%	60%	71%	80%	**67%**
Mother to child transmission while giving birth	78%	85%	78%	82%	90%	**83%**
Mother to child transmission through breastfeeding[b]	52%	64%	29%	58%	84%	**49%**
Average Score[b] (median, range)	**8.4 (8, 6-10)**	**8.8 (9, 4-10)**	**7.7 (8, 4-10)**	**8.6 (9, 3-10)**	**8.9[d] (9, 6-10)**	**8.4[d] (9, 3-10)**

[a] The remaining participants responded incorrectly or did not know the answer.
[b] Significant community differences, p<0.001.
[c] Correct response to these statements was 'false'; all other statements were true.
[d] 1 participant did not respond.

3.2.1.3 Personal Relationships with HIV-Positive Individuals

Participants were asked whether they knew anyone who is HIV positive either in Toronto's East African community or their home country. Over two-thirds (68%, 311/455) reported they knew at least one HIV-positive East African (Table 25; see Table 26 for number of HIV-positive people known). Participants reported knowing more HIV-positive people in their home countries than in Toronto's East African community. Forty

percent (181/455) of participants had an HIV-positive family member, with more women reporting an HIV-positive family member than men (47% vs. 32%, p<0.001).

Fewer Somalis and more Ugandans knew an HIV-positive East African (Table 25). Compared to other communities, more Ugandans had a family member who was HIV positive (67% vs. Ethiopian 26%, Kenyan 51%, Somali 6%, Tanzanian 55%, p<0.0001). Ugandans knew a greater number of HIV-positive East Africans (median 10 vs. Ethiopian 1, Kenyan 5, Somali 0, Tanzanian 4).

Table 25. Knew at least one HIV-positive East African (by community)

Community	Percent of participants (n) who knew HIV-positive person in…					
	Toronto[a]		Home country[b]		Toronto and/or home country[b]	
Ethiopian	26%	(26/100)	52%	(52/100)	62%	(62/100)
Kenyan	29%	(29/99)	74%	(74/99)	79%	(78/99)
Somali	17%	(17/100)	20%	(20/100)	28%	(28/100)
Tanzanian	25%	(14/55)	78%	(43/55)	84%	(46/55)
Ugandan	56%	(57/101)	92%	(93/101)	96%	(97/101)
Total	**31%**	**(143/455[c])**	**62%**	**(282/455[c])**	**68%**	**(311/455[c])**

[a] *Refers to Toronto's East African community; significant community differences, p<0.001.*
[b] *Significant community differences, p<0.0001.*
[c] *1 participant did not respond (declined).*

Table 26. Number of HIV-positive East Africans known

Number of HIV-positive people known	Percent of participants (n) who knew HIV-positive person(s) in…					
	Toronto[a]		Home country		Toronto[a] and/or home country	
0 people	69%	(308)	38%	(170)	32%	(143)
1 person	10%	(46)	6%	(29)	8%	(37)
2-4 people	15%	(67)	20%	(89)	20%	(88)
5-9 people	4%	(18)	10%	(46)	13%	(56)
10+people	2%	(10)	25%	(114)	28%	(123)
Total	**100%**	**(449[b])**	**100%**	**(448[c])**	**100%**	**(447)**

[a] *Refers to Toronto's East African community.*
[b] *7 participants did not respond (3 did not know; 1 declined; 3 missing).*
[c] *8 participants did not respond (2 did not know; 1 declined; 5 missing).*

3.2.1.4 Sources of Information for Health Issues and HIV

When asked where they would obtain information concerning general health issues, all but six participants reported they knew where to get information. For general health issues, the majority (85%, 378/446) would obtain information from a professional health or social services advisor (Table 27). Nearly two-thirds (61%, 274//446) would use the internet and other self-help sources, and over one-third (36%, 162/446) would consult someone they knew personally. When asked where they would obtain information concerning HIV/AIDS, all but eight participants reported they knew where to get information.

Women were more likely to consult professional advisors for general health issues (88% vs. 81%, p>0.05), as well as HIV/AIDS info (86% vs. 77%, p<0.05); women were also more likely to cite community organizations as a source of HIV/AIDS information (42% vs. 23%, p<0.0001). Men were more likely to say they would obtain information on HIV/AIDS from someone they knew personally (28% vs. 20%, p>0.05).

Compared to participants from other communities, more Somalis reported they would consult someone they knew personally for general health information (54% vs. Ethiopian 35%, Kenyan 28%, Tanzanian 25%, Ugandan 31%, p<0.001), as well as HIV/AIDS information (41% vs. Ethiopian 19%, Kenyan 22%, Tanzanian 9%, Ugandan 23%, p<0.0001).

Table 27. Sources of information for general health issues and HIV/AIDS

Source[a]	Percent of participants (n) citing source for… General health information (N=446[b])		HIV/AIDS information (N=446[c])	
Professional advisors	85%	(378)	82%	(364)
Primary health care provider/facility	82%	(365)	79%	(351)
Social services/social worker/counselor	2%	(8)	1%	(6)
Public health	2%	(9)	4%	(19)
Telephone hot-lines	11%	(47)	5%	(24)
Pharmacist/pharmacy	2%	(7)	<1%	(1)
Alternative therapist	1%	(4)	1%	(3)
Self-help sources	61%	(274)	64%	(287)
Internet	55%	(246)	58%	(259)
Magazines/newspapers/books/pamphlets	21%	(93)	21%	(94)
Library	3%	(15)	6%	(26)
Personal contact	36%	(162)	24%	(108)
Friends/family/partner/spouse	35%	(155[d])	23%	(103[e])
Co-workers/colleagues/work	2%	(9)	2%	(7)
Community organizations	13%	(58)	33%	(145)
General community organizations	7%	(30)	13%	(60)
Church	1%	(3)	1%	(6)
School	4%	(18)	7%	(30)
HIV/AIDS service organizations	2%	(10)	16%	(71)
Other	15%	(68)	16%	(71)
Television/radio	6%	(26)	7%	(31)
Telephone/service directory	4%	(16)	1%	(3)
Other government sources	3%	(15)	5%	(22)
Conferences/workshops/seminars/training	<1%	(1)	2%	(8)
Miscellaneous	2%	(11)	2%	(9)
Vague	<1%	(2)	2%	(8)

[a] *More than one response possible.*
[b] *10 participants did not respond (4 missing, 6 did not know).*
[c] *10 participants did not respond (2 missing, 8 did not know).*
[d] *9 participants specified family/friend worked in health care field.*
[e] *2 participants specified family/friend worked in health care field.*

3.2.1.5 Where to Obtain Condoms

Participants were asked to list as many places as they could think of where they would get a condom. Almost all participants (99%, 441/446) knew at least one place to access condoms. The majority of participants reported they would obtain condoms from various stores (94%, 416/441), mainly pharmacies (83%, 368/441), and 37% (162/441) would obtain condoms from health care facilities or professionals (Table 28).

Women were more likely than men to say they would obtain condoms from primary health care providers and/or public health departments (50% vs. 23%, $p<0.0001$). Community differences existed in citing stores (Ethiopian 97%, Kenyan 94%, Somali 96%, Tanzanian 100%, Ugandan 89%, $p<0.05$).

Table 28. Where condoms would be obtained

(N=441[a]) Source	Percent of participants (n) citing source	
Stores	94%	(416)
Pharmacies	83%	(368)
Gas stations/convenience stores	37%	(164)
Grocery/department/other stores	11%	(48)
Novelty/sex stores	2%	(7)
Primary care providers/facilities/public health	37%	(162)
Community centers/organizations	12%	(52)
Friends/partners/family members	7%	(31)
Schools	6%	(27)
Public venues	6%	(27)
Bars/nightclubs/pubs/restaurants	2%	(11)
Washrooms/vending machines	4%	(17)
HIV/AIDS organizations	5%	(20)
Other	5%	(20)

[a] *15 participants did not respond (1 declined; 9 missing; 5 did not know).*

3.2.2 ATTITUDES

3.2.2.1 HIV-Related Stigma

Participants were asked six questions concerning HIV-related stigma (Table 29). Responses to these questions were used to create a stigma score.[9] The average stigma score was 1.7 (range 0-6). Over half of the sample (55%, 253/456) reported they would not eat in a restaurant where the cook was HIV positive, one-third would want it to be kept a secret if a family member was HIV positive (33%, 150/453), and almost one-

[9] Stigma scores could range from 0 to 6. A stigmatizing response received a score of 1, 'don't know' responses were given a value of 0.5, and a non-stigmatizing response was worth 0.

quarter (23%, 106/455) would not want their child in a classroom with an HIV-positive child.

There were no gender differences for overall stigma scores, although more men reported they would want it to be kept a secret if a family member were HIV positive (65% vs. 55%, p<0.05). On average, Somali participants had higher stigma scores compared to the other communities (average 2.5 vs. Ethiopian 1.5, Kenyan 1.2, Tanzanian 1.4, Ugandan 0.8, p<0.0001).

Table 29. HIV-related stigmatizing statements

	Percent of participants (n) who…	
Statements	**Had stigmatizing response**	**Did not know**
Would not eat in a restaurant with an HIV-positive cook	55% (253/456)	9% (41/456)
Would want to keep it a secret if family member became HIV positive	33% (50/453[a])	2% (7/453[a])
Would not allow their child in a classroom with HIV-positive student	23% (106/455[b])	9% (42/455[b])
Does not think HIV-positive teacher should be allowed to teach	16% (72/455[c])	4% (19/455[c])
Would not be willing to work near an HIV-positive person	13% (59/456)	5% (21/456)
Would not be willing to care for HIV-positive family member	8% (37/456)	3% (14/456)

[a] 3 participants did not respond (2 declined; 1 missing).
[b] 1 participant did not respond (missing).
[c] 1 participant did not respond (declined).

Stigma and knowledge, attitudes, and beliefs

People who reported fewer stigmatizing attitudes relating to HIV had higher HIV knowledge scores (Pearson's r=-0.0385, p<0.001; Table 30) and higher levels of perceived risk for contracting HIV on a scale of 0-5 (Pearson's r=-0.1689, p<0.001; Table 31).

Table 30. HIV knowledge (by level of stigma)

		HIV knowledge score[b]		
Stigma score[a]	**N**	**Average**	**Median**	**Range**
Low stigma score (0-<2)	258	11.7	12	7-13
Moderate stigma score (2-<4)	142	11.0	11	6-13
High stigma score (4-6)	51	10.0	10	5-13
Total	**451[c]**	**11.3**	**12**	**5-13**

[a] Significant differences across stigma score categories, p<0.0001.
[b] Knowledge score consisted of 3 general questions and 10 relating to HIV transmission.
[c] 5 participants did not respond to question regarding HIV knowledge and/or stigma.

Table 31. Average perceived HIV risk (by level of stigma)

Stigma score[a]	N	Perceived HIV risk[b]		
		Average	Median	Range
Low stigma score (0-<2)	243	1.01	1	0-5
Moderate stigma score (2-<4)	140	0.83	0	0-5
High stigma score (4-6)	50	0.38	0	0-3
Total	**433[c]**	**0.88**	**0**	**0-5**

[a] Significant differences across stigma score categories, p<0.0001.
[b] Measured on a scale of 0 ('no risk at all') to 5 ('a lot of risk').
[c] 23 participants did not respond to question regarding perceived risk and/or stigma.

Stigma and knowing someone who is HIV positive

People who reported knowing someone who is HIV positive had lower stigma scores (i.e., provided fewer stigmatizing responses) compared to people who did not know someone with HIV (stigma score average 1.2 vs. 2.2, p<0.0001). Similarly, participants who knew more HIV-positive people also had lower stigma scores (Table 32). Those who did not have any HIV-positive family members had higher stigma scores than those who had close or extended family members who were HIV positive (p<0.05).

Table 32. Stigma (by number of HIV-positive East Africans known)

Number of HIV-positive East Africans known[a]	N	Stigma score		
		Average	Median	Range
0 people	141	2.4	2	0-6
1 person	36	1.53	1	0-5.5
2-4 people	86	1.57	1.25	0-5
5-9 people	56	1.40	1	0-6
10+ people	123	1.10	1	0-4
Total	**442[b]**	**1.7**	**1.25**	**0-6**

[a] Refers to HIV-positive people in Toronto's East African community and/or home country; significant differences across stigma score categories, p<0.0001.
[b] 14 participants did not respond to question regarding number of HIV-positive East Africans known and/or stigma.

Table 33. Average stigma score (by relationship to HIV-positive East African)

Relationship to HIV-positive East African known[a,b]	N	Stigma Score		
		Average	Median	Range
Knows HIV-positive close family member	82	0.9	1	0-4
Knows HIV-positive extended family member (but no close family members)	130	1.3	1	0-4.5
Knows HIV-positive person, but no HIV-positive family members	91	1.8	1	0-6
Total	**303[c]**	**1.3**	**1**	**0-6**

[a] Significant differences across stigma score categories, p<0.0001.
[b] Refers to HIV-positive people in Toronto's East African community and/or home country.
[c] 8 participants did not respond to question about knowing HIV-positive people and/or stigma.

Stigma and sexual behaviour

Stigma scores were higher among people who had never had sex compared to people who had sex (2.1 vs. 1.5, $p<0.0001$), although this appears to be due to religion. When religion (Muslim vs. non-Muslim) was accounted for, stigma was no longer related to whether or not participants ever had sex. No other sexual behaviour variables were related to stigma.

3.2.2.2 HIV-Related Disclosure

Participants were asked four questions relating to disclosure of HIV status. Overall, a high proportion of participants reported that they would disclose their status if they became infected with HIV. Almost all would tell a close family member (92%, 408/444) or current sexual partner (97%, 284/292) if they became infected; furthermore, 87% (340/391) thought it would be important to have their previous sexual partners notified if they found out they were HIV positive (Table 34). Nearly everyone (96%, 440/456) felt that HIV-positive people should tell their new sexual partners. Of the 12 people who self-reported as being HIV positive, five had not disclosed their status to anyone.

Table 34. Statements relating to HIV-disclosure

Statement	Percent of participants (n) who... Agreed	Did not know
Would tell close family member if they became HIV positive	92% (408/444[a])	3% (12/444[a])
Would tell their current sexual partner if they became HIV positive	97% (284/292[a,b])	2% (5/292[a,b])
Think it would be important to notify previous sexual partners if they found out they were HIV positive	87% (340/391[a,c])	3% (13/391[a,c])
Think that HIV-positive people should tell their new sexual partners	96% (440/456)	1% (6/456)

[a] *Excludes 12 HIV-positive participants.*
[b] *Not applicable to 152 participants.*
[c] *Not applicable to 53 participants.*

3.2.3 BELIEFS

3.2.3.1 Belief of Personal Risk for Contracting HIV

Participants were asked to assess their personal risk for contracting HIV on a scale of 0 ('no risk at all') to 5 ('a lot of risk'). Over half (56%, 245/440) felt they were at no personal risk for contracting HIV and a further one-third (32%, 140/440) felt they were at low risk (1 or 2 on the risk scale; Figure 2). The average score for belief of personal

risk was 0.87 (median 0, range 0-5). More Somalis felt they were not at risk for HIV compared to the other communities (Figure 3).

Participants who knew at least one HIV-positive person perceived themselves as having higher risk for HIV compared to those who did not know an HIV-positive person (average 1.1 vs. 0.4, p<0.0001). The average score for belief of personal risk for contracting HIV increased with number of sexual partners over the participants' lifetime (Table 35). Despite this increase in average score for personal risk, a substantial proportion of participants reported higher numbers of sexual partners and also reported a belief that they were at 'no risk at all' for HIV.

Participants who reported concurrent sexual partners (i.e., sex with more than one partner during the same time period) had higher scores for belief of risk compared to those who did not report concurrent sexual partners (average 1.8 vs. 0.9, p<0.0001; Table 36). Belief of personal risk for HIV was also related to whether participants believed that their regular partners had concurrent sexual partners. Belief of personal risk was highest among participants who reported that their regular partners had concurrent sexual partners, followed by those who did not know; belief of personal risk was lowest among those who believed that that their regular partner had not had concurrent sexual partners (average 1.9 vs. 1.2 vs. 0.7; p<0.0001).

Figure 2. Belief of personal risk for contracting HIV

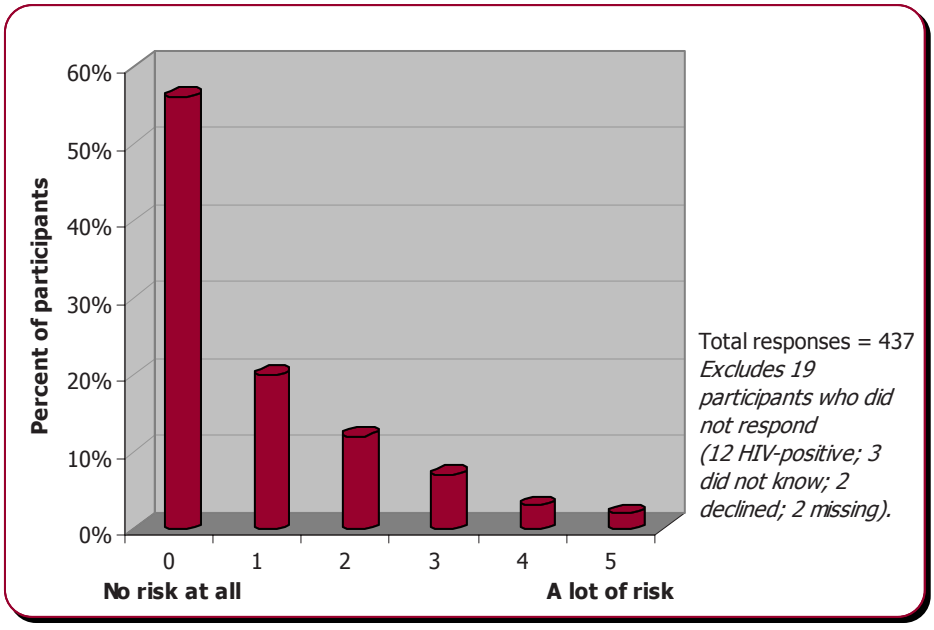


Figure 3. Belief of personal risk for contracting HIV (by community)

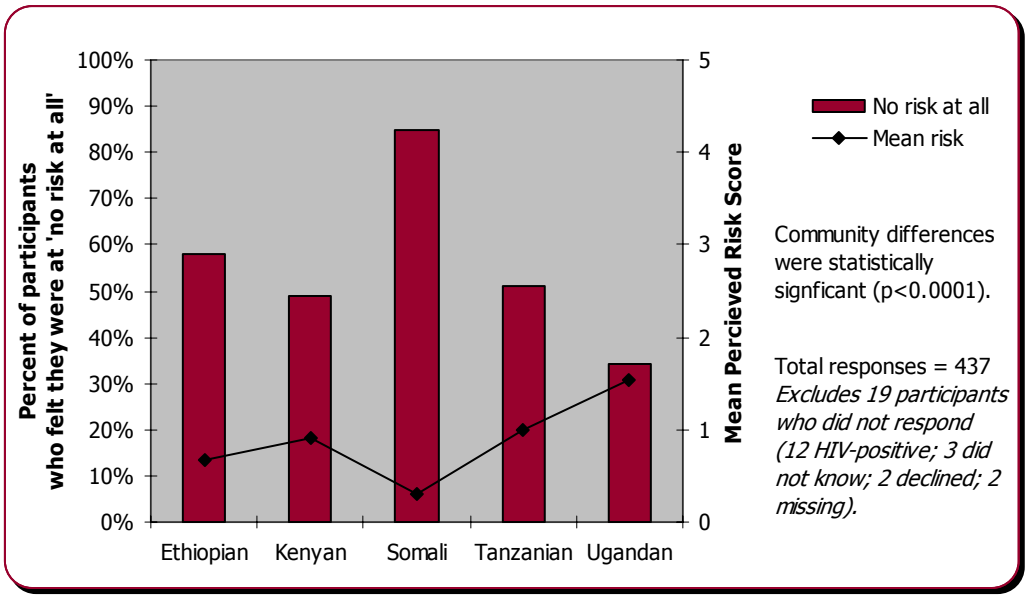


Table 35. Belief of personal risk for contracting HIV (by number of sexual partners)

Number of partners	Percent of participants (n) saying 'no risk at all'[a]		Personal risk score[a,b]		
			Average	Median	Range
0 partners	83%	(33/40)	0.4	0	0-3
1 partner	71%	(47/66)	0.6	0	0-5
2-4 partners	58%	(83/144)	0.8	0	0-5
5-9 partners	47%	(38/81)	1.0	1	0-4
10-19 partners	41%	(18/44)	1.3	1	0-5
20+ partners	29%	(10/34)	1.4	1	0-4
Total	**56%**	**(229/409[c])**	**0.9**	**0**	**0-5**

[a] *Significant differences by number of partners, p<0.0001.*
[b] *Belief of personal risk for HIV was measured on a scale of 0 (no risk at all) to 5 (a lot of risk).*
[c] *47 participants did not respond to question regarding number of sexual partners and/or risk.*

Table 36. Average personal risk for HIV (by concurrent sexual partners)

Concurrent sex in previous year	N	Personal risk score[a]		
		Average	Median	Range
Participant had concurrent sexual partners[b]				
No	40	0.9	2	0-5
Yes	266	1.8	2	0-5
Total	**306[c]**	**1.0**	**1**	**0-5**
Regular partner had concurrent sexual partners[b]				
No	175	0.7	0	0-4
Yes	28	1.9	2	0-5
Did not know	94	1.2	1	0-5
Total	**297**	**0.9**	**1**	**0-5**

[a] *Belief of personal risk for HIV was measured on a scale of 0 (no risk at all) to 5 (a lot of risk).*
[b] *Significant differences in perceived risk, p<0.0001.*
[c] *27 participants did not respond to question regarding concurrent sexual partners and/or risk.*

3.2.3.2 Perceived Health Problems in Community

Participants were read a list of health issues and asked to what extent they believed each was a problem (major, minor, or not a problem) in their own community in Toronto. 'Lack of exercise' was most cited (51%, 233/455) as a major problem by participants and 'smoking' closely followed with 44% (202/455) citing it as a major problem (see Figure 4 for more detail).

Two-thirds (66%, 300/455) of the sample felt that HIV/AIDS was either a minor or major problem, with the majority (42%, 189/455) citing it as a major problem. Interestingly, a quarter of participants felt they did not know if HIV was a problem in their community in Toronto. Compared to other communities, fewer Somali participants felt that HIV was a problem in their community (Figure 5).

Figure 4. Perception of health issues in their community

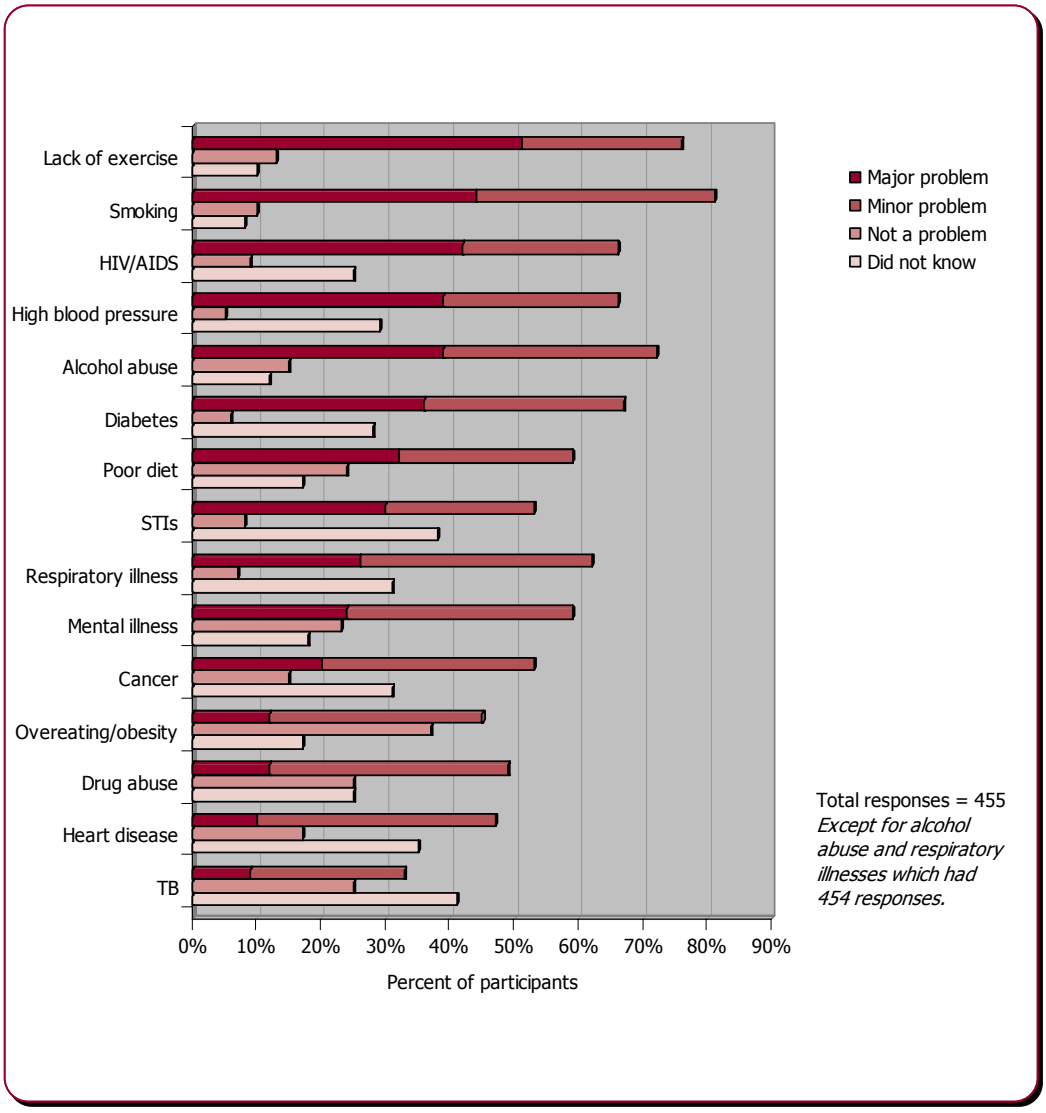
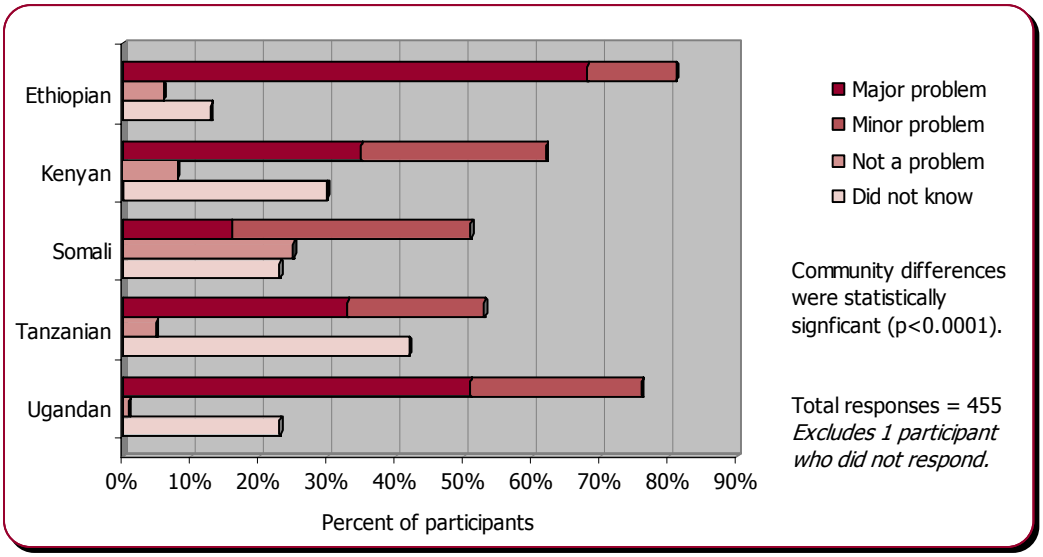


Figure 5. Perception that HIV is a problem in their community (by community)



3.3 HEALTH BEHAVIOUR AND RISK

3.3.1 HIV-RELATED RISK

3.3.1.1 Sexual Behaviour

Sexual behaviour history[10]

Of the total sample, 91% (415/455) reported ever having sex (Table 37). Of those who had never had sex, 83% (33/40) were female; those who never had sex were also younger compared to those who had sex (average 22.8 vs. 36.9, p<0.0001). The average age when participants first had sexual intercourse was 18.5 years (median 18, range 8-33). Sixty percent (257/426) of the sample had fewer than 5 sexual partners in their lifetime and 9% (37/426) reported 20 or more partners (Table 38).

Almost three-quarters (73%, 333/456) of participants reported having had sex in the previous year. Almost one-fifth of the sample (19%, 76/392[11]) had two or more partners in the previous year. Among those who had sex in the previous year, 71% (200/281) reported that their only sexual partner in the previous year was a husband, wife, girlfriend, boyfriend, or fiancé.

In general, men were more sexually active than women. Men started having sex at a younger age (17.2 years vs. 19.6 years, p<0.0001) and were more likely to ever have had sex (Table 37) and have had sex in the previous year (86% vs. 79%, p=0.05); they also reported higher numbers of sexual partners in their lifetime (Table 38), as well as in the previous year (Table 39).

Fewer Somalis reported ever having sex (82% vs. Ethiopian 90%, Kenyan 92%, Tanzanian 95%, Ugandan 98%, p<0.01).

The number of sexual partners in a participant's lifetime increased with age (Pearson's r=0.14, p<0.01); whereas, the number of sexual partners in the previous year decreased with age (Pearson's r=-0.17, p<0.01).

Only 1% (2/150) of women who reported sex in the previous year also reported dry sex or vaginal cleansing.

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[10] Participants were provided with a separate paper questionnaire for the sexual behaviour questions. Self-completion of this section resulted in a higher number of missing or inconsistent answers compared to interviewer-administered sections.

[11] 52 participants reported having sex in the previous year, but did not provide a response for number of sexual partners in the previous year (4 Ethiopians, 15 Kenyans, 4 Somalis, 1 Tanzanians, 28 Ugandans). The majority of these missing data were due to modifications to the survey (38); additional missing data were due to errors during self-completion (1), declining the question (8), and responding with 'don't remember' (5).

Table 37. Ever had sexual intercourse (by gender and age category)

Age category	Percent of participants (n)					
	Women		Men		Total	
Less than 20 years	29%	(7/24)	29%	(2/7)	29%	(9/31)
20-24 years	52%	(13/25)	93%	(26/28)	74%	(39/53)
25-29 years	96%	(43/45)	100%	(36/36)	98%	(79/81)
30+ years	98%	(129/131)	100%	(153/153)	99%	(282/284)
Total[a]	**85%**	**(192/225)**	**97%**	**(217/224)**	**91%**	**(409/449[b])**

[a] *Significant gender differences in whether ever had sex, p<0.0001.*
[b] *6 people did not respond to question relating to age and/or sexual intercourse.*

Table 38. Number of sexual partners in lifetime (by gender)

Number of partners[a]	Percent of participants (n)					
	Women		Men		Total	
Never had sex	15%	(33)	3%	(7)	9%	(40)
1 partner	24%	(52)	7%	(14)	15%	(66)
2-4 partners	46%	(101)	24%	(50)	35%	(151)
5-9 partners	10%	(22)	30%	(61)	19%	(83)
10-19 partners	4%	(8)	20%	(41)	12%	(49)
20+ partners	2%	(5)	16%	(32)	9%	(37)
Total	**100%**	**(221[b])**	**100%**	**(205[c])**	**100%**	**(426)**

[a] *Significant gender difference, p<0.0001.*
[b] *9 women did not respond (6 declined; 2 did not remember; 1 missing).*
[c] *21 men did not respond (3 declined; 17 did not remember; 1 missing).*

Table 39. Number of sexual partners in previous year (by gender)

Number of partners[a]	Percent of participants (n)					
	Women		Men		Total	
0 partners[b]	36%	74	20%	37	28%	111
1 partner	53%	(109)	52%	(96)	52%	(205)
2 partners	8%	(17)	11%	(21)	10%	(38)
3 partners	2%	(5)	11%	(20)	6%	(25)
4 partners	<1%	(1)	2%	(3)	1%	(4)
5+ partners	0%	(0)	5%	(9)	2%	(9)
Total	**100%**	**(206[c])**	**100%**	**(186[d])**	**100%**	**(392)**
Average[a] (range)	**1.2**	**(1-4)**	**1.9**	**(1-12)**	**1.6**	**(1-12)**

[a] *Significant gender difference, p<0.0001.*
[b] *Includes 40 people who never had sex.*
[c] *24 women did not respond (4 declined; 1 did not remember; 19 missing).*
[d] *40 men did not respond (10 declined; 4 did not remember; 26 missing).*

Concurrent sexual partners

Of those who had sex in the previous year, 14% (44/317) reported concurrent sexual partners[12] and 11% (33/309) reported that their regular partner[13] had concurrent sexual

[12] Concurrent sexual partners refers to having had sex with more than one person during the same time period.
[13] 'Regular partner' was explicitly defined as including a 'spouse or boyfriend/girlfriend'.

partners. Furthermore, 11 participants who reported they had concurrent sexual partners also reported that their regular sexual partner had concurrent sexual partners. More men than women reported having concurrent sexual partners in the previous year (21% vs. 6%, p<0.0001). More Ugandans reported they had concurrent sexual partners in the previous year (26% vs. Ethiopian 9%, Kenyan 10%, Somali 13%, Tanzanian 9%, p<0.05).

Type of sexual partners in previous year

Of those who reported sex in the previous year, 80% (220/274) reported having sex only with regular partners[14], 16%(43/274) had sex with both regular and non-regular partners, and 4% (11/274) only had sex with non-regular partners (Table 40). Fewer women reported having non-regular partners in the previous year (12% vs. 26%, p<0.01). Among those who did have non-regular partners, women reported having fewer of these partners than men (average 1.3 vs. 2.4, p<0.01).

Among those who had non-regular partners (54), Ugandans reported a higher number of partners than other communities (average 3.9 vs. Ethiopian 1.3, Kenyan 1.7, Somali 1.9, Tanzanian 1.4, p<0.01).

Of those who had sex in the previous year, 84% (239/286) had a sexual partner who was born in Africa (Table 41). In the previous year, more men than women reported sexual partners who were not born in Africa (39% vs. 13%, p<0.0001).

Of those who had had sex, 5% (19/409) reported at least one same-sex partner. More men than women reported a same sex-partner (7% vs. 2%, p<0.05).[15]

Table 40. Type of sexual partners in previous year

Type of partners	Percent of participants (n)		Number of partners		
			Average	Median	Range
Regular partners only	80%	(220)	1.1	1	1-4
Regular and non-regular partners	16%	(43)	3.5	3	2-12
Non-regular partners only	4%	(11)	1.9	2	1-4
Total	**100%**	**(274[a])**	**1.5[b]**	**1**	**1-12**

[a] Types of partners could not be determined for 59 participants due to missing data.
[b] 52 participants did not respond to number of partners in the previous year.

[14] In this section, 'regular partner' refers to a 'husband or wife, girlfriend or boyfriend, or fiancé'. The term 'regular partner' and 'non-regular partner' were never explicitly used in these questions.
[15] Concerns were raised around the validity of responses to this question; the number of same-sex partners reported by men may have been inflated as a result.

Table 41. Proportion of sexual partners in previous year born in Africa

Number of partners	Percent of participants (n)	
None of them	16%	(47)
Some of them	11%	(31)
All of them	73%	(208)
Total	**100%**	**(286[a])**

[a] 47 participants did not respond (5 declined; 42 missing).

3.3.1.2 Condom Use in Previous Year

Frequency of condom use

Of those who reported having sex in the previous year, 72% (237/328) reported not using condoms on at least one occasion. Condom use varied greatly depending on the type of partner; of those who had regular partners in the previous year 44% (134/308) reported never using condoms with their regular partners and an additional 29% (89/308) did not use condoms with their regular partners on at least one occasion. Of those who had casual partners in the previous year, 18% (14/80) reported not using condoms on at least one occasion (Table 42). All seven men who reported sex with sex trade workers reported using condoms all of the time with these partners.

Fewer women than men reported using condoms all of the time with regular partners (19% vs. 34%, $p<0.01$) and with casual partners (63% vs. 88%, $p<0.05$). Community differences existed for 'always uses condoms with casual partners' (Ethiopian 93%, Kenyan 88%, Somali 100%, Tanzanian 70%, and Ugandan 68%, $p<0.05$), although only a small number of people from each community reported having had casual partners.

Table 42. Frequency of condom use (by type of sexual partner in previous year)

How often used condoms	Percent of participants (n) with…					
	Regular sexual partners		Casual sexual partners		Sex workers	
None of the time	44%	(134)	0%	(0)	0%	(0)
Some of the time	18%	(56)	5%	(4)	0%	(0)
Most of the time	11%	(33)	13%	(10)	0%	(0)
All of the time	28%	(85)	83%	(66)	100%	(7)
Total	**100%**	**(308[a])**	**100%**	**(80[b])**	**100%**	**(7[c])**

[a] 13 participants did not respond (1 declined; 12 missing).
[b] 15 participants did not respond (1 declined; 14 missing).
[c] 4 participants did not respond (1 declined; 3 missing).

Imperfect condom use

Participants were asked if at any time in the previous year a condom ever broke or slipped off, whether it was always put on before intercourse, and whether it was ever taken off and then they continued to have intercourse. Of those who reported using condoms in the previous year, 39% (77/195) reported at least one incident of imperfect condom use (Table 43).

Table 43. Imperfect condom use in previous year

Issue with condom	Percent of participants[a] (n)	
Condom broke/slipped off	20%	(38/193[b])
Condom not put on before sexual intercourse	14%	(27/195[c])
Condom removed early	19%	(37/195[c])

[a] Includes only those who reported condom use on at least one occasion in the past year.
[b] 4 participants did not respond (2 declined; 2 did not know).
[c] 2 participants did not respond (1 declined; 1 did not know).

Reasons for condom use

Of those who used condoms with regular partners, 49% (84/171) reported they used condoms to prevent pregnancy and STIs (including HIV) and 46% (78/171) used condoms to prevent pregnancy only (Table 44). Of those who used condoms with casual partners, 82% (64/78) used condoms to prevent pregnancy and STIs, while only one person used condoms just to prevent pregnancy. More women than men reported using condoms for prevention of STIs (66% vs. 45%, p<0.01).

Table 44. Reason for condom use in previous year (by type of sexual partner)

	Percent of participants (n) with…					
Reason for condom use	Regular sexual partners		Casual sexual partners		Sex workers	
Pregnancy only	46%	(78)	1%	(1)	0%	(0)
HIV/STI only	4%	(7)	17%	(13)	33%	(2)
Both pregnancy and HIV/STI	49%	(84)	82%	(64)	67%	(4)
Other	1%	(2)	0%	(0)	0%	(0)
Total	**100%**	**(171[a])**	**100%**	**(78[b])**	**100%**	**(6[c])**

[a] 4 participants did not respond (4 missing).
[b] 2 participants did not respond (2 missing).
[c] 1 participant did not respond (missing).

Reasons for not using condoms

Participants were asked to think about the last time they did not use condoms during sexual intercourse in the previous year.[16] Participants were then read a list of possible reasons for not using condoms and asked if any contributed to their decision. The most frequently reported reason for not using condoms was because the participant was with their regular partner; 92% (207/224) cited this as a reason (Table 45). Half (50%, 112/224) did not use condoms because they felt their partner did not have HIV or because they themselves did not have HIV (37%, 84/224). Almost a quarter (24%, 54/224) did not use condoms because they 'do not like them'.

More men than women reported 'use of drugs or alcohol' as a reason for not using a condom (4% vs. 0%, p<0.01). Of the six who said they felt they could not talk to their partner about condom use, five were female (although this was not statistically

[16] On the last occasion when condoms were not used (in the previous year), 98% (219/223) were with regular partners and 2% (4/223) with casual partners.

significant). Fewer Tanzanians reported that they 'think their partner does not have HIV' (24% vs. Ethiopian 59%, Kenyan 53%, Somali 50%, Ugandan 55%, p<0.05).

Table 45. Reasons for not using condom on last occasion

(N=224[a]) Reason for not using condom[b]	Percent of participants (n) who reported not using condom	
Was with regular partner	92%	(207)
Did not think partner had HIV/AIDS	50%	(112)
Participant did not have HIV/AIDS	38%	(84)
Participant did not like condoms	24%	(54)
Partner did not want to use condoms	21%	(46)
Wanted to get pregnant	18%	(41)
Did not think of using condoms	16%	(36)
Sex was too exciting	11%	(25)
Did not have a condom	11%	(25)
Afraid partner would accuse of sex with others	4%	(9)
Was using drugs/alcohol	4%	(8)
Too embarrassed to get condoms	3%	(7)
Could not talk about it	3%	(6)
Could not afford to buy condoms	1%	(2)
Didn't know where to get one	<1%	(1)
Other reasons	5%	(10)

[a] *13 participants did not respond (3 declined; 10 missing).*
[b] *More than one answer possible.*

3.3.1.3 Other HIV Risk Factors

Blood transfusion

Twenty-eight participants (6%, 28/452) reported receiving a blood transfusion or blood product, four of whom had a transfusion on two separate occasions. Only one reported that her own blood was used. There were 20 participants who reported having at least one blood transfusion in East African (from 1968-2002) and six participants reported only having a blood transfusion in Canada (from 1995-2006).

Circumcision

Three-quarters of men (76%, 170/225) and 23% (52/227) of women had been circumcised (Table 46). Compared to other communities, fewer Ugandan men (28% vs. Ethiopian 90%, Kenyan 82%, Somali 100%, Tanzanian 81%, p<0.0001) and more Somali women were circumcised (61% vs. Ethiopian 28%, Kenyan 14%, Tanzanian 3%, Ugandan 0%, p<0.0001).

Table 46. Circumcision (by gender and community)

Community[a]	Percent of participants (n) who are circumcised			
	Women		Men	
Ethiopian	28%	(14/48)	90%	(45/50)
Kenyan	14%	(7/50)	82%	(41/50)
Somali	61%	(30/49)	100%	(49/49)
Tanzanian	3%	(1/29)	81%	(21/26)
Ugandan	0%	(0/51)	28%	(14/50)
Total	**23%**	**(52/227[b])**	**76%**	**(170/225[c])**

[a] Significant community differences (p<0.0001) for both women and men.
[b] 3 women did not respond (2 did not know; 1 declined).
[c] 1 man did not respond (missing).

Surgery history

Almost one-third of the sample (32%, 145/455) reported ever having had surgery, with 8% (38/455) of the sample reporting more than one surgery and 12% (53/455) reporting at least one surgery in East Africa (dates ranging from 1962-2005). Women were more likely to have had surgery than men (40% vs. 23%, p<0.0001). Among those who had surgery, women reported undergoing a greater number of surgical procedures in their lifetime than men (average 1.5 vs. 1.2, p<0.01).

Tattooing and scarification

Only 3% (15/456) of the sample reported being tattooed, with one person reporting two tattoos. Of those, eleven participants were tattooed in Canada or the United States (1991 or later) and four were tattooed in other countries (Ethiopia [1974, 1983], Thailand [2004], and Uganda [2004]).

Thirteen people reported scarification and all were done in East Africa.[17] Of those who reported scarification, five were Kenyan, five were Somali, one was Tanzanian and two were Ugandan; 6 were women and 7 were men. The average age for scarification was 9.4 years (range 0-22 years).

3.3.2 SUBSTANCE USE

3.3.2.1 Alcohol

Over one-third of the sample (34%, 156/456) had never had a drink of alcohol and 40% (184/456) did not drink alcohol in the previous year. Only 8% (38/456) reported drinking more than once per week in the previous year (Table 47). Nearly a third of participants (29%, 131/455) reported drinking 5 or more drinks on at least one occasion in the previous year, with 5% (22/455) doing so on at least a weekly basis.

[17] 1 person did not provide the country in which the scarification took place.

There were no gender differences in whether participants ever drank alcohol, but women drank less often and less heavily than men.[18] Fewer Somalis and more Ugandans reported ever drinking (Ethiopian 80%, Kenyan 71%, Somali 19%, Tanzanian 71%, Ugandan 90%, p<0.0001).

Table 47. Frequency of alcohol use in previous year

Frequency	Percent of participants (n)			
	Any alcohol use		Heavy alcohol use[a]	
Never	40%	(184[b])	71%	(324)
Less than once a month	15%	(67)	12%	(53)
Once a month	11%	(50)	7%	(34)
Two to three times a month	15%	(67)	5%	(22)
Once a week	11%	(50)	3%	(14)
Two to three times a week	7%	(32)	2%	(7)
Four to six times a week	<1%	(2)	0%	(0)
Daily	1%	(4)	<1%	(1)
Total	**100%**	**(456)**	**100%**	**(455[c])**

[a] *Heavy alcohol use was defined as '5 or more drinks on one occasion'.*
[b] *156 participants had never had a drink during their lifetime.*
[c] *1 participant did not respond (did not know).*

3.3.2.2 Smoking

Although 21% of the sample (95/455) reported ever smoking daily, 11% (48/455) of the sample currently smoked cigarettes daily (Table 48). More men than women reported ever smoking daily (32% vs. 10%, p<0.0001). Men were more than twice as likely as women to be current smokers (24% vs. 10%, p<0.0001) and were also twice as likely to be current daily smokers (14% vs. 7%, p<0.05). More Somalis reported ever smoking daily (34% vs. Ethiopian 19%, Kenyan 16%, Tanzanian 18%, Ugandan 16%, p<0.05). Also, more Somalis were current smokers than other communities (28% vs. Ethiopian 18%, Kenyan 12%, Tanzanian 11%, Ugandan 13%, p<0.05) and were current daily smokers (22% vs. Ethiopian 10%, Kenyan 5%, Tanzanian 5%, Ugandan 8%, p<0.001). Over half (9/16) of the female daily smokers were Somali (p<0.05).

Table 48. Current frequency of smoking cigarettes

Frequency	Percent of participants (n)	
Daily	11%	(48)
Regularly, but not daily	1%	(6)
Occasionally	5%	(23)
Not at all	83%	(378)
Total	**100%**	**(455[a])**

[a] *1 participant did not respond (declined).*

[18] Data were not included for gender and community differences in drinking in the previous year due to restrictions on length of report.

3.3.2.3 Illicit Drugs

One-quarter of the sample (25%, 115/456) reported ever using illicit drugs, with 50% (58/115) of these people reporting drug use in the previous year and 18% (21/115) reporting ever using drugs on a weekly basis. Marijuana and chat were the most commonly used drugs, with only four people reporting using other types of drugs (Table 49). No injection drug use was reported.

More men reported ever using drugs (36% vs. 16%, p<0.0001), including marijuana (23% vs. 13%, p<0.01) and chat (22% vs. 5%, p<0.0001). The only community difference in drug use was for chat, with more Ethiopians reporting ever using chat than other communities (30% vs. Kenyan 9%, Somali 15%, Tanzanian 7%, Ugandan 3%, p<0.0001).

Table 49. Illicit drug use

Drug	Percent of participants (n) who…					
	Ever used drug		Used drug more than once		Used drug in previous year	
Marijuana	18%	(83/456)	11%	(52/456)	9%	(41/456)
Chat/khat/mira	13%	(61/455)	11%	(51/455)	6%	(28/452)
Cocaine/crack	<1%	(2/456)	<1%	(1/456)	<1%	(1/456)
Ecstasy	<1%	(1/456)	0%	(0/456)	0%	(0/456)
Other	<1%	(1/456)	0%	(0/456)	0%	(0/456)
Any Drug	**25%**	**(115/456)**	**18%**	**(84/456[a])**	**13%**	**(58/456)**

[a] *Refers to using at least one type of drug on more than one occasion.*

3.4 HEALTH STATUS AND HEALTH CARE UTILIZATION

3.4.1 HEALTH STATUS

3.4.1.1 Self-Rated Health Status

When asked to rate their current health status in comparison to others of their age, the majority of participants (91%, 411/453) felt their health was excellent, very good, or good (Table 50). Compared to one year ago, 64% (291/454) felt their health was about the same, 27% (123/454) felt their health was better, and 9% (40/454) felt their health was worse than the previous year.

Tobacco and drug use were related to self-rated health status. On average, smokers reported poorer general health on a 5-point scale[19] (average 3.5 vs. 4.0; $p<0.001$). Individuals who reported ever using drugs rated their general health as being poorer compared to individuals who had never used drugs (average 3.7 vs. 4.0, $p<0.05$). A similar trend was found when comparing those who had used drugs in the previous year to those who had not used drugs in the previous year (3.6 vs. 3.9, $p<0.05$).

Table 50. Self-rated health status

Self-rated health status	Percent of participants (n)	
Excellent	34%	(156)
Very Good	31%	(142)
Good	25%	(113)
Fair	8%	(36)
Poor	1%	(6)
Total	**100%**	**(453[a])**

[a] 3 participants did not respond (1 missing; 2 did not know).

3.4.1.2 Chronic Conditions

Almost half (47%, 216/455) of the sample reported living with at least one chronic condition at the time they were interviewed. The most commonly reported conditions were non-food allergies (12%, 53/455), back problems (8%, 36/455), and food allergies (7%, 34/455) (Table 51).

More women than men reported migraines (8% vs. 3%, $p<0.05$), diabetes (9% vs. 3%, $p<0.01$), and thyroid conditions (7% vs. 0.4%, $p<0.001$). Somalis and Tanzanians were more likely to report asthma (11% and 11% vs. Ethiopian 4%, Kenyan 4%, Ugandan 2%, $p<0.05$), and there were community differences in reporting of diabetes (Ethiopian 7%, Kenyan 6%, Somali 11%, Tanzanian 0%, Ugandan 2%, $p<0.05$).

[19] Self-reported health was measured on a 5-point scale ranging from '1=poor' to '5=excellent'.

A higher proportion of people who ever smoked daily[20] reported having at least one chronic health condition compared to people who had never smoked daily (62% [59/95] vs. 43% [156/360], p<0.01). More participants who reported drug use also reported at least one chronic condition compared to non-drug users (60% [69/115] vs. 43% [147/341], p<0.01). A similar trend was found when comparing those who had used drugs in the previous year to those who had not used drugs in the previous year (60% [35/58] vs. 45% [181/398], p<0.05).

Table 51. Chronic health conditions (6 months or longer)

(N=455[a]) Health condition[b]	Percent of participants (n)	
Non-food allergies (e.g., hayfever)	12%	(53)
Back problems (excluding fibromyalgia/arthritis)	8%	(36)
Food allergies	7%	(34)
High blood pressure	6%	(29)
Asthma	6%	(27)
Migraine headaches	6%	(26)
Diabetes	6%	(26)
Stomach or intestinal ulcers	5%	(21)
Arthritis/rheumatism	4%	(18)
Thyroid condition	4%	(16)
Depression	3%	(15)
Sickle-cell anaemia	1%	(4)
Fibromyalgia	1%	(4)
Hepatitis	1%	(4)
Epilepsy	1%	(3)
Heart disease	1%	(3)
Cancer	<1%	(2)
Acute tuberculosis (TB)	<1%	(2)
Crohn's disease or colitis	<1%	(2)
Chronic bronchitis	<1%	(1)
Other long-term conditions	8%	(37)

[a] *1 person did not respond (missing).*
[b] *More than one response possible.*

[20] Includes current daily smokers as well as people who reported previously being a daily smoker.

3.4.1.3 HIV Infection within EAST Sample

HIV infection was ascertained via HIV antibody testing of saliva specimens collected during interviews. Saliva specimen results were obtained for 72% (327/456) of participants.[21] The saliva test results indicate that 2.1% of the study sample was HIV-positive.[22] Based on the results of the EAST study, it is estimated that HIV prevalence within the communities ranges anywhere between 0.03% and 3.7% (Table 52).

However, all study participants (including those who did not provide a saliva sample) were asked to report their HIV status. Twelve participants reported that they were HIV positive (six were confirmed with laboratory testing, one provided an insufficient quantity of saliva, and five declined to provide saliva). Additionally, one participant self-reported being HIV-negative, but tested HIV-positive.

Of the 12 people who self-reported as being HIV positive, 10 thought they had been infected through heterosexual sex, one through blood transfusion, and one either through heterosexual sex or during a surgical procedure.

Table 52. HIV antibody test results

	N	Percent of participants who were HIV-positive (95%CI)	
All participants who provided a saliva specimen			
Women	3/177	1.7%	(0.0 - 3.6)
Men	4/150	2.7%	(0.06 - 5.3)
Total	**7/327**	**2.1%**	**(0.6 - 3.7)**
Excluding HIV-positive participants recruited in two-week period[22]			
Women	1/175	0.6%	(0.0 - 1.7)
Men	3/149	2.0%	(0.0 - 4.3)
Total	**4/324**	**1.2%**	**(0.03 - 2.4)**

3.4.1.4 History of Sexually Transmitted Infections

Eleven percent (51/455) of the sample reported ever being diagnosed with an STI. More men than women reported ever having an STI (17% vs. 6%, p=0.001). Fewer Somalis reported an STI (3% vs. Ethiopian 8%, Kenyan 12%, Tanzanian 18%, Ugandan 18%, p<0.01).

The odds of having a sexually transmitted infection diagnoses increased with the number of lifetime partners (Table 53).

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[21] 76% (347/456) of the sample provided a saliva sample for HIV antibody testing; 6% (20/347) of the samples could not be analysed due to insufficient quantities of saliva.

[22] Every effort was made to recruit a representative sample. Nevertheless, 46% (6/13) of participants who self-reported and/or tested HIV-positive were interviewed within a two-week period (interviews took place over 27 months). This cluster of HIV-positive participants may have resulted in an over-representation of HIV positivity within the EAST sample. Hence HIV prevalence was calculated with and without these participants.

Table 53. Odds ratios for ever having an STI (by number of lifetime partners)

(N=385[a]) Number of sexual partners	Unadjusted OR[b] (95% CI)	
1 partner	1.0	
2-4 partners	5.1	(0.65 - 40.7)
5-9 partners	8.9	(1.1 - 71.5)
10-19 partners	12.7	(1.5 - 105.2)
20+ partners	44.3	(5.5 - 355.2)

[a] Excludes 40 people who never had sex; 31 participants did not respond to question regarding number of sexual partners and/or STI history.
[b] Odds of STI diagnosis were significantly different by number of sexual partners, p<0.0001.

3.4.2 HEALTH CARE UTILIZATION

3.4.2.1 Accessing Health Professionals

The majority of participants (87%, 395/455) reported they had a medical or family doctor. Fewer Ugandans reported having a family doctor (70% vs. Ethiopian 94%, Kenyan 85%, Somali 96%, Tanzanian 89%, p<0.0001). Almost all (93%, 426/456) participants had contact with at least one health care professional in the previous year. The majority (86%, 393/456) had contact with a family doctor and almost half (45%, 207/455) had seen a dentist (Table 54). Furthermore, 17% (78/456) had contact with an alternative health care professional in the previous year (Table 55).

More women than men reported contact with at least one health professional in the previous year (97% vs. 90%, p<0.01). When examining the individual types of health professionals contacted in the previous year, more women saw a general practitioner (90% vs. 82%, p<0.01), medical doctor specialist (excluding ophthalmologists) (35% vs. 18%, p<0.0001), nurse (19% vs. 7%, p=0.0001), dentist (51% vs. 39%, p<0.05), dietician (8% vs. 3%, p<0.05), psychosocial professional (25% vs. 17%, p<0.05), and alternative health care professional (24% vs. 10%, p<0.0001).

Overall, there were no community differences in whether people had contact with at least one health professional in the previous year; however, fewer Ugandans and Ethiopians saw eye specialists (21% and 22% respectively vs. Kenyan 37%, Somali 38%, Tanzanian 33%, p<0.05) and fewer Ugandans had contact with dentists (32% vs. Ethiopian 55%, Kenyan 47%, Somali 45%, Tanzanian 51%, p<0.05). Furthermore, more Ugandans saw a psychosocial professional (33% vs. Ethiopian 14%, Kenyan 22%, Somali 19%, Tanzanian 15%, p<0.05).

In the previous year, 7% (31/456) of participants were overnight patients, for an average of 2.1 nights (median 1, range 1-10). People who reported poorer health were more likely to have seen a health care professional in the previous year (Table 56).

Table 54. Personal contact with health care professionals in previous year (by gender)

Health care professional[a]	Percent of participants (n)		
	Women (n=230)	Men (n=226)	Total (n=456)
Family doctor or general practitioner[c]	90% (208)	82% (185)	86% (393)
Dentist or orthodontist[b]	51% (118)	40% (89)	45% (207)
Eye specialist or doctor	31% (72)	29% (64)	30% (136)
Other specialist medical doctor[d]	35% (80)	18% (40)	26% (120)
Psychosocial professional	25% (57)	17% (39)	21% (96)
Nurse or nurse practitioner[d]	19% (43)	7% (15)	13% (58)
Physiotherapist	9% (20)	7% (17)	8% (37)
Chiropractor	9% (20)	5% (11)	7% (31)
Dietician/nutritionist[b]	8% (19)	3% (8)	6% (27)
Audiologist, speech or occupational therapist	2% (5)	<1% (1)	1% (6)
Other	3% (6)	<1% (1)	1% (7)

[a] More than one response possible.
Significant gender differences: [b] p<0.05, [c] p<0.01, [d] p≤0.0001.

Table 55. Contact with alternative health care professionals in previous year (by gender)

Alternative health care professional[a]	Percent of participants (n)		
	Women (n=230)	Men (n=226)	Total (n=456)
Massage therapist[b]	15% (34)	6% (13)	10% (47)
Religious or spiritual healer[b]	7% (15)	1% (3)	4% (18)
Acupuncturist	3% (7)	4% (8)	3% (15)
Homeopath, naturopath, or herbalist[c]	5% (12)	1% (2)	3% (14)
Traditional African healer	<1% (1)	0% (0)	<1% (1)
Other	0% (0)	0% (0)	0% (0)

[a] More than one response possible.
Significant gender differences: [b] p<0.01, [c] p<0.05.

Table 56. Contact with a health care professional in previous year (by self-rated health status)

Self-rated health status[a]	Percent of participants (n) who reported contact with health professional	
Excellent	88%	(138/156)
Very Good	94%	(134/142)
Good	98%	(111/113)
Fair	94%	(34/36)
Poor	100%	(6/6)
Total	**93%**	**(423/453[b])**

[a] Significant differences across self-rated health categories, p<0.05; Mantel-Haenszel chi-square statistic suggests a linear trend, p<0.01.
[b] 3 participants did not respond to question regarding self-rated health status.

3.4.2.2 Health Screening

Physical check-up

In the past three years, almost all (96%, 434/454) participants had a physical check-up (Table 57). Despite women being more likely to have seen a general practitioner in the previous year, there were no gender differences in having a physical check-up in the past three years. Also, having a physical check-up did not seem to be related to whether participants had an immigration medical exam or to length of residence in Canada.

The most reported reason for not having a check-up in the past three years was 'did not think it was necessary', followed by 'have not gotten around to it' (Table 58). Two people cited 'cost' as a reason.

Table 57. Last time had physical check-up

Last check-up	Percent of participants (n)	
Less than 1 year ago	74%	(335)
1 to less than 3 years ago	22%	(99)
3 or more years ago	3%	(15)
Never	1%	(5)
Total	**100%**	**(454[a])**

[a] 2 participants did not respond (1 missing; 1 did not know).

Table 58. Reasons for not having a physical check-up in past 3 years

(N=20) Reason[a]	Percent of participants (n) who cited reason	
You did not think it was necessary	75%	(15)
You have not gotten around to it	55%	(11)
Doctor did not think it was necessary	15%	(3)
You had personal or family responsibilities	15%	(3)
Cost	10%	(2)
Fear (e.g., painful, embarrassing, finding something wrong)	10%	(2)
Not available at the time that you required it	5%	(1)
Waiting time was too long	5%	(1)
Transportation problem	5%	(1)
Language problem	5%	(1)
Other (specify)	5%	(1)

[a] *More than one answer possible.*

Blood pressure checked

In the past two years, 94% (428/454) of the sample reported they had their blood pressure checked by a health professional, with the majority having it checked in the previous year (Table 59). Again, the main reason for not having blood pressure checked was 'did not think it was necessary', followed by 'did not get around to it' (Table 60).

Those with poor health were more likely to have had their blood pressure checked in the previous six months compared to those with fair/good/very good health or excellent health (100% [6/6] vs. 64% [184/289] and 55% [85/156], $p<0.05$).

Table 59. Last time had blood pressure checked

Last time taken	Percent of participants (n)	
Less than 1 year ago	83%	(377)
1 year to less than 2 years ago	11%	(51)
2 or more years ago	5%	(21)
Never	1%	(5)
Total	**100%**	**(454[a])**

[a] *2 participants did not respond (1 missing; 1 did not know).*

Table 60. Reason for not having blood pressure checked in past two years

(N=26) Reason[a]	Percent of participants (n) who cited reason	
You did not think it was necessary	92%	(24)
You have not gotten around to it	61%	(16)
Doctor did not think it was necessary	23%	(6)
You had personal or family responsibilities	8%	(2)
Not available at all in your area	8%	(2)
Fear (e.g., painful, embarrassing, finding something wrong)	8%	(2)
Not available at the time that you required it	4%	(1)
Waiting time was too long	4%	(1)
Transportation problem	4%	(1)
You did not know where to go	4%	(1)

[a] *More than one answer possible.*

Pap smear test

While 70% (161/229) of female participants had a Pap smear test in the past three years, nearly a quarter (24%, 56/229) never had a Pap smear test (Table 61). Of those who never had a Pap smear, the average age was 25.4 (median 22.5, range 16-58) and half (51%, 28/55) reported having had sex. The main reason for not having a Pap smear in the past three years was 'did not think it was necessary' (61%, 39/64), followed by 'did not get around to it' (52%, 33/64) and 'fear' (33%, 21/64) (Table 62). Of those who did not think it was necessary, almost half (17/39) reported having had sex.

Table 61. Last time had Pap smear test

Last Pap smear test	Percent of participants (n)	
Less than 1 year ago	49%	(112)
1 to less than 3 years ago	21%	(49)
3 or more years ago	5%	(12)
Never	24%	(56)
Total	**100%**	**(229[a])**

[a] *1 participant did not respond (missing).*

Table 62. Reason for not having Pap smear test in past three years

(N=64[a]) Reason[b,c]	Percent of participants (n) who cited reason	
You did not think it was necessary	61%	(39)
You have not gotten around to it	52%	(33)
Fear (e.g., painful, embarrassing, finding something wrong)	33%	(21)
Doctor did not think it was necessary	30%	(19)
You had personal or family responsibilities	9%	(6)
Waiting time was too long	8%	(5)
You did not know where to go	8%	(5)
Not available at the time that you required it	6%	(4)
Not available at all in your area	6%	(4)
Transportation problem	2%	(1)
Cost	2%	(1)
Additional responses	28%	(18)
Did not know what a Pap smear is[c]	*17%*	*(11)*

[a] *4 people did not respond (4 missing).*
[b] *More than one answer possible.*
[c] *'Did not know what a Pap smear is' was extracted from other (unprompted) responses.*

3.4.3 Unmet Need for Health Care

3.4.3.1 Self-Reported Unmet Need for Health Care

Participants were asked whether, in the previous year, there was a time when they felt they needed health care but did not receive it. Over one-quarter (27%, 124/456) responded that there had been a time when they needed health care but did not receive it. Women were more likely to report an unmet need (37% vs. 17%, $p<0.0001$). Of those who reported an unmet need in the previous year, 24% (29) felt their most recent need was urgent, 44% (53) somewhat urgent, and 32% (39) not urgent.

Reporting an unmet need was related to both age and length of residence in Canada, such that younger and newer immigrants were more likely to report an unmet need (Table 63). People who reported being in poorer health were also more likely to report an unmet health care need in the previous year. Individuals who did not have a family doctor were more likely to report an unmet health care need compared to those who had a family doctor (42% [25/60] vs. 25% [99/395], $p<0.01$).

Table 63. Unmet health care need (by age category, length of residence in Canada, and self-rated health status)

	Percent of participants (n) with unmet need	
Age category[a]		
<20 years	42%	(13/31)
20-29 years	33%	(44/134)
30-39 years	26%	(37/144)
40+ years	22%	(29/141)
Total	**27%**	**(123/450[d])**
Length of residence in Canada[b]		
0-4 years	37%	(49/133)
5-9 years	26%	(23/87)
10+ years	21%	(47/226)
Total	**27%**	**(119/446[e])**
Self-rated health status[c]		
Excellent	17%	(27/156)
Very Good	28%	(40/142)
Good	33%	(37/113)
Fair	42%	(15/36)
Poor	83%	(5/6)
Total	**27%**	**(124/453[f])**

Significant differences across: [a] age categories, $p<0.05$, [b] length of residence in Canada, $p<0.01$, [c] self-rated health cateogries, $p=0.0001$.
[d] 6 participants did not respond to question regarding age and/or unmet need.
[e] Excluded 9 participants who were born in Canada; 1 participant did not respond to question regarding length of residence and/or unmet need.
[f] 3 participants did not respond to question regarding self-rated health status and/or unmet need.

3.4.3.2 Reasons for Not Accessing Care

The five most reported reasons for not accessing care when needed, on the most recent occasion in the previous year, were: 'waiting time too long' (45%, 55/121), 'too busy to go' (40%, 49/121), 'care was not available at time required' (32%, 38/121), 'didn't get around to it' (31%, 38/121), and 'cost' (30%, 36/121) (Table 64).

Table 64. Reasons for unmet health care need in previous year

(N=121[a]) Reason[b]	Percent of participants (n)	
The waiting time was too long	45%	(55)
You were too busy to go	40%	(49)
Care was not available at the time required	32%	(39)
You didn't get around to it or didn't bother	31%	(38)
The cost	30%	(36)
You felt the care would be inadequate or wouldn't be enough	23%	(28)
You couldn't take time off work	20%	(24)
You had personal or family responsibilities	18%	(22)
You did not know where to go	16%	(20)
You dislike or are afraid of doctors	14%	(17)
You had transportation problems	12%	(15)
Care was not available in your area	11%	(13)
You were concerned about discrimination	7%	(9)
You had a language problem	<1%	(1)
Other reasons	21%	(25)

[a] 3 participants did not respond (3 missing).
[b] More than one response possible; refers to the most recent unmet health care need in the previous year.

3.4.3.3 Type of Care Needed

Over half (58%, 70/121) of those who had an unmet health care need in the previous year reported their need was for treatment of an illness and 16% (19/121) reported they needed a regular check-up (Table 65).

Table 65. Most recent type of unmet health care need

Type of care	Percent of participants (n)	
Treatment of illness (including mental illness)	58%	(70)
Regular check-up	16%	(19)
Care of an injury	11%	(13)
Dental care[a]	8%	(10)
Other	7%	(9)
Total	**100%**	**(121[b])**

[a] 'Dental care' responses were extracted from 'other' (unprompted) responses.
[b] 3 participants did not respond (3 missing).

3.5 HIV TESTING

3.5.1 HISTORY OF HIV TESTING

3.5.1.1 Ever Tested for HIV

Three-quarters (75%, 340/453) of the sample had ever tested for HIV, 22% (101/453) had never been tested, and 3% (12/453) did not know if they had ever been tested. More men than women reported ever testing for HIV (83% vs. 71%, p<0.01). More Ugandans and fewer Ethiopians and Somalis had tested for HIV (Table 66).

Table 66. Ever tested for HIV (by community)

Community[a]	Percent of participants (n)	
Ethiopian	61%	(61/100)
Kenyan	80%	(80/100)
Somali	57%	(56/98)
Tanzanian	89%	(49/55)
Ugandan	94%	(94/100)
Total	**75%**	**(340/453[b])**

[a] *Significant community differences, p<0.0001.*
[b] *3 participants did not respond (2 declined; 1 missing).*

3.5.1.2 Number of HIV Tests in Lifetime

Of the participants who had ever tested for HIV, the average number of tests was 2.8 (median 2, range 1-20). Although more men tested for HIV, women may have tested more frequently, although this difference did not reach statistical significance (average 3.1 vs. 2.6, p=0.07). Not only did Somalis have the lowest proportion tested, but those who had tested also tested fewer times. Although Ethiopians had a lower proportion of people tested (compared to Kenyans, Tanzanians, and Ugandans), those who had tested reported a similar number of times tested (Table 67).

Table 67. Number of lifetime HIV tests (by community)

		Number of Tests		
Community[a]	N	Average	Median	Range
Ethiopian	61	2.8	2	1-12
Kenyan	80	3.2	2.5	1-20
Somali	56	1.8	1	1-6
Tanzanian	48	2.8	2	1-10
Ugandan	92	3.2	2.5	1-16
Total	**337[b]**	**2.8**	**2**	**1-20**

[a] *Significant community differences, p<0.01.*
[b] *3 participants did not respond (3 missing).*

3.5.1.3 Immigration Testing

Of those participants who had been tested for HIV, almost two-thirds (65%, 223/340) had been tested as part of the immigration process and 9% (30/340) did not know if they had been tested for immigration. A higher proportion of women reported not

knowing whether they had tested for immigration (14% vs. 4%, p<0.01). Excluding those who did not know, more men reported HIV testing for immigration purposes (77% vs. 65%, p<0.05).

Fewer Ethiopian and Somali participants were tested for HIV as part of the immigration process (Table 68). These differences were likely due to the Kenyan, Tanzanian, and Ugandan communities immigrating more recently than Ethiopians and Somalis.

Table 68. Ever tested for HIV for immigration purposes (by community)

Community[a]	Percent of participants (n)	
Ethiopian	25%	(23/91)
Kenyan	63%	(55/87)
Somali	38%	(34/90)
Tanzanian	77%	(39/51)
Ugandan	79%	(72/91)
Total	**54%**	**(223/410[b])**

[a] *Significant community differences, p<0.0001.*
[b] *Excludes 42 participants who did not know if they had ever been tested and/or did not know if they had been tested for immigration; 4 participants did not respond (2 declined; 2 missing).*

3.5.1.4 Date and Location of First and Last HIV Test

Participants were asked details about their first and last HIV test. An average of 7.1 years had passed since participants reported having their *first* HIV test (median 6, range 0-22). There were no gender or community differences to suggest that certain groups initiated HIV testing earlier than others.

On average, 3.1 years had passed since participants had their *last* HIV test (median 1, range 0-19). Time elapsed from last HIV test was longer for men than women (3.5 vs. 2.5 years, p<0.05); in other words, women had tested more recently. Somalis tested an average of 6.1 years ago, which was longer than other groups (Ethiopian 2.2, Kenyan 2.8, Tanzanian 2.7, Ugandan 2.3, p<0.0001). Therefore, not only had fewer Somalis ever tested, but those who did test had tested fewer times and had tested less recently.

The majority of testers (83%, 282/340) had their most recent test in Canada. There were community differences in whether the most recent HIV test was done in Canada (Ethiopian 93%, Kenyan 86%, Somali 75%, Tanzanian 71%, Ugandan 84%, p<0.05). Three-quarters (75%, 252/338) of those who had tested reported that their most recent test was done in a doctor's office, followed by 17% who were tested in a hospital (Table 69). Only one person reported that his/her most recent test had been done at an anonymous testing site.

Table 69. Location of most recent HIV test

Location	Percent of participants (n)	
Doctor's office	75%	(252)
Hospital	17%	(57)
Home (for insurance)	3%	(9)
Immigration clinic	1%	(5)
Insurance office	1%	(4)
Research facility	1%	(5)
Anonymous site	<1%	(1)
Other	1%	(5)
Total	**100%**	**(338[a])**

[a] *2 participants did not respond (2 missing).*

3.5.1.5 Doctor-Recommended HIV Testing

Only one-fifth (20%, 89/453) of participants reported that a doctor had ever suggested that they get tested for HIV. More women than men received a doctor's recommendation to test (30% vs. 9%, p<0.0001). Nearly everyone who had received a doctor's recommendation to test had tested for HIV at some point in their lifetime compared to only three-quarters of those without a recommendation (98% [87/89] vs. 72% [253/352], p<0.0001). Of the 54 people who reported their most recent test was recommended by a doctor, half (27) cited prenatal screening as the reason.

3.5.2 Reasons for Testing and Never Testing

3.5.2.1 Reasons for Most Recent HIV Test

Participants who had tested for HIV were asked whether they took their most recent test because someone suggested that they should, or because of their own decision (independent of a recommendation). Of the people who had tested 60% (202/338) had tested based on someone's suggestion or because of a requirement. More Ethiopians reported that they independently decided to get their most recent HIV test (62% vs. Kenyan 45%, Somali 30%, Tanzanian 33%, Ugandan 31%, p<0.001).

The most commonly reported reason for independent testing was to ensure they were HIV negative so they could have sex without a condom (cited by 43%, 59/136), followed by a belief that they might have been exposed to HIV through sexual activity (38%, 52/136; Table 70).

The majority (60%, 121/202) of those who followed a suggestion to test reported that they had tested because of an immigration requirement and over one-quarter (27%, 54/202) reported their doctor suggested they test (Table 71). The main reason doctors suggested a test was prenatal screening (Table 72). More men than women were recommended to test by a doctor because of symptoms (55% vs. 5%, p<0.001).

Table 70. Reason for receiving most recent test (independent of suggestion)

(N=136) Reason[a,b]	Percent of participants (n) who cited reason	
You wanted to make sure you were HIV negative so you and your partner could have sex without condoms	43%	(59)
You think you might have been exposed to HIV through sexual activity	38%	(52)
You found out your partner had sex with other people during your relationship	16%	(22)
You were concerned that you might have been exposed to HIV through sharing needles	1%	(2)
You were concerned you might have been exposed to HIV through a blood transfusion	1%	(2)
You had signs or symptoms of HIV/AIDS	1%	(2)
Your partner was/is HIV positive	<1%	(1)
Additional responses provided:	54%	(73)
Vague/general/reasoning (just wanted to know status)	*24%*	*(32)*
Part of a medical check-up	*12%*	*(16)*
Prenatal testing	*4%*	*(6)*
Regular tester	*3%*	*(4)*
Medical professional exposure	*3%*	*(4)*
Exposure through dental procedure	*2%*	*(3)*
Family planning	*1%*	*(2)*
Blood exposure	*1%*	*(2)*
Other	*7%*	*(9)*

[a] *More than one answer possible.*
[b] *Participants were read a list of possible reasons and asked if any contributed to their decision to test. Other reasons (open-ended) were coded and reported under 'additional responses'.*

Table 71. Person suggesting most recent HIV test (by gender)

Person[a]	Percent of participants (n)					
	Women (n=91)		Men (n=111)		Total (n=202)	
Immigration authorities[b]	41%	(37)	76%	(84)	60%	(121)
Doctor[b]	47%	(43)	10%	(11)	27%	(54)
Insurance company	7%	(6)	9%	(10)	8%	(16)
Partner	2%	(2)	2%	(2)	2%	(4)
Other	5%	(5)	6%	(7)	6%	(12)

[a] *More than one answer possible.*
[b] *Significant gender differences, p<0.0001.*

Table 72. Reason doctor suggested most recent HIV test (by gender)

Reason[a]	Percent of participants (n)					
	Women (n=39)		Men (n=11)		Total (n=50[b])	
Prenatal screening	67%	(26)	--	--	54%	(26)
Symptoms[c]	5%	(2)	55%	(6)	16%	(8)
Part of general health check-up	3%	(1)	9%	(1)	4%	(2)
Partner was pregnant	--	--	36%	(4)	8%	(4)
Other	21%	(8)	0%	(0)	16%	(8)
Vague response	5%	(2)	0%	(0)	4%	(2)

[a] *More than one answer possible.*
[b] *4 participants did not respond (4 missing).*
[c] *Significant gender differences, p<0.001.*

3.5.2.2 Reasons for Never Testing

When non-testers were asked why they had never tested, the majority reported that they felt healthy (85%, 84/99) and/or did not think they were at risk for HIV (81%, 80/99) (Table 73). The most commonly reported reasons for participants not thinking they were at risk for HIV were because they believed their partner was faithful and/or that they practiced safe sex. Over two-thirds of non-testers have never thought about getting tested. Only 16 people reported that they have not tested because they were afraid of how their community or partner would react.

Table 73. Reasons for never testing

(N=99[a]) Reason[b,c]	Percent of participants (n) who cited reason	
You feel that you don't need to test because you feel healthy	85%	(84)
You don't think you are at risk for HIV because you are careful[d]	81%	(80)
Reason you believe you are not at risk:		
Not exposed through sexual activity	61%	(61)
Limited sexual activity	47%	(47)
Practices safe sex	11%	(11)
Partner fidelity	10%	(10)
Low partner risk	2%	(2)
No other exposure	12%	(12)
Does not inject drugs/use drugs/share needles	9%	(9)
No blood transfusion	2%	(2)
No needle stick injury/contact with used needles	1%	(1)
General statements about not being at risk	7%	(7)
Knows how HIV is transmitted	2%	(2)
Other	7%	(7)
Vague response	7%	(7)
Did not know	1%	(1)
You never really thought about getting tested	68%	(67)
You are afraid of how your community would treat you if you tested positive	14%	(14)
You could not face finding out you were HIV positive	9%	(9)
You are afraid of how your partner would react if you tested HIV positive	8%	(8)
You didn't know where to go for a test	7%	(7)
You couldn't take the time off to go for a test	5%	(5)
You do not trust health professionals to keep your test results confidential	2%	(2)
You were afraid that an HIV positive test may affect your immigration status	0%	(0)
Other	4%	(4)

[a] 2 of the non-testers did not respond (2 missing).
[b] More than one answer possible.
[c] Participants were read a list of possible reasons and asked if any contributed to them never testing.
[d] Those who agreed with this statement were asked 'Why don't you think you are at risk'; these open-ended responses were coded.

3.5.2.3 Circumstances that would Prompt an HIV Test

Participants who had never been tested for HIV were asked in what circumstance they would consider getting tested for HIV. Over half (59%, 60/101) said they would consider getting tested if they thought they may have been exposed to HIV through sexual

activity, 21% (21/101) said they would get tested if they suspected non-sexual exposure to HIV, and 21% (21/101) would get tested if they or their partner experienced symptoms. Four people said they did not know what would prompt them to test and three people said they would not test (Table 74).

Table 74. Circumstances that would prompt an HIV test

(N=101) Reason[a]	Percent of participants (n) who cited reason	
Sexual exposure	59%	(60)
Sexual risk (e.g., becomes sexually active; unprotected sex; multiple/casual partners)	41%	(41)
Partner risk (e.g., partner tested HIV-positive; suspects partner is positive)	12%	(12)
Partner infidelity (e.g., partner cheated; does not trust partner)	9%	(9)
Raped/forced sex	3%	(3)
Other exposure (e.g., needle stick injury, injection drug use, transfusion/transplant, unsafe medical equipment)	21%	(21)
Symptoms (experienced by self or partner)	21%	(21)
Relationship/family planning (e.g., in preparation for new sexual relationship/marriage/pregnancy)	8%	(8)
Someone required/recommended test (e.g., doctor recommendation, blood donation, employment requirement, etc)	7%	(7)
Person close to participant tests positive (e.g., family/friends/person participant lives with)	6%	(6)
Did not know/had not thought about it	4%	(4)
Would not get tested	3%	(3)
General exposure/risk (e.g., exposed to HIV/at risk/thought they might have contracted HIV)	3%	(3)
Other	6%	(6)
Vague response	10%	(10)

[a] *More than one answer possible.*

3.5.3 HIV Testing and Knowledge, Attitudes, and Beliefs

3.5.3.1 HIV Testing and Knowledge

Knowledge and beliefs about HIV testing in Canada

Participants were asked whether they agreed or disagreed with three statements concerning the confidentiality of HIV test results, anonymous testing, and locations for testing (Table 75). Almost one-third of the sample (32%, 145/455) was not confident that health professionals in Canada would keep HIV test results confidential. Almost three-quarters (71%, 321/455) were unaware of anonymous testing options, either agreeing that, or being unsure if, names always had to be given when testing for HIV in Canada. Furthermore, 16% (71/455) did not know where to get an HIV test in Canada.

Those who had been in Canada for a very short time or a very long time were less likely to know where to get tested compared to the middle categories (69% of those who lived in Canada for 0-2 years knew where to get tested vs. 89% of those here for 3-19 years vs. 72% of those here for 20+ years, $p<0.0001$). This relationship was still significant after accounting for age. More Ethiopians were aware of anonymous testing compared to other communities (41% vs. Kenyan 23%, Somali 30%, Tanzanian 34%, Ugandan 21%, $p<0.05$).

Table 75. Knowledge and beliefs about HIV testing in Canada

(N=455) Statement	Percent of participants (n) who…					
	Disagreed		Agreed		Did not know	
You are confident that health care professionals in Canada always keep results of HIV tests confidential	12%	(53)	68%	(310)	20%	(92)
You always have to give your name when you get an HIV test in Canada	29%	(134)	40%	(182)	31%	(139)
You know where to go to get an HIV test if you wanted one in Canada	9%	(41)	84%	(384)	7%	(30)

HIV knowledge

On average, people who had tested for HIV had higher HIV knowledge scores[23] compared to people who had never tested (average 11.4 vs. 10.6, $p<0.0001$).

[23] Knowledge score consisted of three general questions concerning HIV and 10 relating to HIV transmission; see Sections 3.2.1.1 and 3.2.1.2 for specific items.

Compared to non-testers, a higher proportion of those who had tested for HIV believed that names must always be provided when testing for HIV in Canada (43% [148/340] vs. 31% [31/101], p<0.05). In other words, more of those who had tested for HIV were unaware of anonymous testing options. More non-testers did not know where to get tested for HIV compared to testers (30% [30/101] vs. 11% [37/340], p<0.0001).

Personal relationships with HIV-positive person

Whether or not a participant had tested for HIV was related to the number of HIV-positive East Africans that participants knew. Participants who knew more HIV-positive people were more likely to have ever been tested for HIV (Table 76). Additionally, people who reported close family members who were HIV-positive were more likely to have been tested than those who reported no HIV-positive family members (Table 77).

Table 76. Ever tested for HIV (by number of HIV-positive East Africans known)

Number of HIV-positive East Africans known[a,b]	Percent of participants (n) who had tested for HIV	
0 people	57%	(78/137)
1 person	66%	(23/35)
2-4 people	80%	(69/86)
5-9 people	89%	(49/55)
10+ people	95%	(111/117)
Total	**77%**	**(330/430[c])**

[a] Refers to number of HIV-positive people known in Toronto's East African Community and/or home country.
[b] Significant differences by number of HIV-positive people known, p<0.0001; Mantel-Haenszel chi-square statistic suggests a significant linear trend, p<0.0001.
[c] 26 participants did not respond to question regarding HIV testing and/or number of HIV-positive East Africans known.

Table 77. Ever tested for HIV (by relationship to HIV-positive East African known)

Relationship to HIV-positive East African[a,b]	Percent of participants (n) who ever tested	
Knows HIV-positive close family member	98%	(79/81)
Knows HIV-positive extended family member (but no close family members)	85%	(108/127)
Knows HIV-positive person, but no HIV-positive family members	78%	(71/91)
Total	**86%**	**(258/299[c])**

[a] Significant differences by type of relationship, p<0.01; Mantel-Haenszel chi-square statistic suggests a significant linear trend, p<0.001.
[b] Includes HIV-positive East African(s) known in Toronto and/or home country.
[c] 12 participants did not respond to questions regarding relationship to HIV positive East African known or HIV testing.

3.5.3.2 HIV Testing and Stigma

In general, people with less stigmatizing attitudes about HIV/AIDS[24] were more likely to have tested for HIV, had tested more times, and had tested more recently compared to people with more stigmatizing attitudes (Table 78).

Table 78. History of HIV testing (by level of stigma)

Stigma score	Percent of participants who have tested for HIV[a]	Average number of… HIV tests in lifetime[b]	Average number of… Years since last HIV test[c]
Low stigma score (0-<2)	88%	3.0	2.7
Moderate stigma score (2-<4)	68%	2.6	3.3
High stigma score (4-6)	53%	1.7	5.2
Total	**77%**	**2.8**	**3.1**

Significant differences across stigma score categories: [a] p<0.0001, N=337, [b] p<0.05, N=334, [c] p<0.01, N=335.

3.5.3.3 HIV Testing and Beliefs

Participants were asked how important they felt it was for people to know whether they have HIV/AIDS by getting tested. Almost all (94%, 428/456) felt it was very important for people to know their HIV status through testing (Table 79). More women than men thought it was 'very important' (97% vs. 91%, p<0.05).

On average, participants who had tested for HIV believed they were at greater risk for contracting HIV[25] compared to non-testers (average risk score 0.99 vs. 0.53, p<0.001).

Table 79. Importance of HIV testing

(N=456) Community	Percent of participants (n)	
Very important	94%	(428)
Somewhat important	5%	(23)
Not at all important	<1%	(1)
Depends on the risk	1%	(3)
Did not know	<1%	(1)

3.5.4 HIV Testing and Risk

3.5.4.1 HIV Testing and Sexual Behaviour

Participants who had not had sex were less likely to have been tested for HIV compared to those who reported previous sexual activity (17% [7/40] vs. 83% [332/400], p<0.0001). Furthermore, the likelihood of having been tested for HIV increased with the

[24] See Section 3.2.2.1 for description of stigma scale.
[25] See Section 3.2.3.1 for description of belief of personal risk scale.

number of lifetime partners and those who did not remember how many partners they had were most likely to have tested (Table 80).

Table 80. Ever tested for HIV (by number of sexual partners in lifetime)

Number of partners[a]	Percent of participants (n) who ever tested	
1 partner	71%	(44/62)
2-4 partners	84%	(120/143)
5+ partners	86%	(143/166)
Does not remember	95%	(18/19)
Total	**83%**	**(325/390[b])**

[a] Significant differences by number of lifetime sexual partners, p<0.05.
[b] Includes only those who reported ever having sex; 25 participants did not know/did not respond to question on HIV testing and/or number of lifetime sexual partners.

3.5.4.2 HIV Testing and Other Risk

More participants who reported a previous STI had been tested for HIV compared to those who had not had an STI (90% [45/50] vs. 75% [295/391], p<0.05). Having ever tested for HIV was not related to whether participants reported ever having a blood transfusion, surgery, scarification, or tattooing.

3.5.5 HIV Testing and Health Care Utilization

Health screening was related to testing behaviour; those who had a check-up less than two years ago were more likely to have ever tested compared to those who had a check-up more than two years ago (79% [310/390] vs. 60% [30/50], p<0.01). This relationship was also apparent with those who have had their blood pressure taken within two years and a Pap smear within three years (Table 81).

Table 81. Ever tested for HIV (by time of other health screening tests)

Other health screening tests	Percent of participants (n) who ever tested for HIV	
Physical check-up[a]		
Last check-up less than 2 years ago	79%	(310/390)
Last check-up 2 or more years ago	60%	(30/50)
Total	**77%**	**(340/440[d])**
Blood pressure screening[b]		
Blood pressure last taken less than 2 years ago	79%	(328/416)
Blood pressure last taken 2 or more years ago	46%	(11/24)
Total	**77%**	**(339/440[d])**
Pap smear[c]		
Last Pap smear less than 3 yrs ago	79%	(124/156)
Last Pap smear 3 or more yrs ago	52%	(34/66)
Total	**71%**	**(158/222[e])**

Significant differences by time of screening behaviour: [a] p<0.01; [b] p<0.001, [c] p<0.0001.
[d] 16 participants did not know/did not respond to question on HIV testing and/or screening.
[e] 8 women did not know/did not respond to question on HIV testing.

4 CONCLUSIONS

4.1 CONTRIBUTIONS

EAST was the first and largest Canadian survey of HIV and health-related issues in communities from African countries. It was conducted in response to the lack of population-based data necessary to assess HIV/AIDS in these communities, and to assist in the development of intervention programs and strategies. The study has made contributions in several key areas: the generation of new research knowledge, provision of a platform on which to base programs, services, and policy decisions, and the building of research capacity through community engagement and sharing of methodological 'lessons learned':

1. Generation of new research knowledge

    - Social determinants of health and mobility patterns

      These data provide new descriptive information that can be used to examine how social determinants such as employment, income, housing, and social support affect health and health service access. Data on mobility and interaction with country and community of origin provide information on potential risk and health behaviour patterns in the communities after immigration to Canada.

    - HIV and other health-related knowledge, attitudes, and beliefs

      We now have a better understanding of HIV and other health-related knowledge, attitudes, and beliefs within these communities. In addition, these data provide insights into how attitudes, such as stigmatizing beliefs, are related to risk behaviour and testing patterns.

    - Health and HIV-related risk (including sexual behaviour)

      For the first time in Canada, we have population-based data on the prevalence of various risk factors and how they vary across these communities and between men and women.

    - HIV testing and infection in the communities

      To date, HIV prevalence rates have been estimated from testing for diagnostic purposes. While limited by the size of the study sample and the non-random nature of recruitment, the infection rates obtained in EAST can be used to estimate overall HIV infection in the communities. These data can also be combined with surveillance information to improve statistical modelling of the epidemic and provide baseline figures to measure changes over time.

- Health and health care utilization

  The survey goes beyond HIV-related health to explore other health and access issues faced by East African individuals and communities. This allows for a comparative and more integrative approach to understanding the uptake of HIV testing, and subsequent treatment and care, while providing valuable information on primary care access and utilization in immigrant communities.

2. Provision of a resource/tool on which to base service delivery and policy decisions

   - The EAST report is a readily available tool/resource that can be used by service providers, community members, funders, and others interested in the development and implementation of effective programs and services for African communities.
   - Targeted information can be developed to address existing knowledge gaps, misperceptions about HIV, and stigmatizing attitudes as highlighted in the report.
   - The EAST data on sexual and other risk behaviour will be essential for establishing targeted interventions and community-specific strategies to reduce HIV and other illnesses.
   - The comprehensive data we collected on HIV testing behaviour and beliefs will assist with the refinement of existing initiatives regarding HIV testing, the development of community-specific testing guidelines, and the interpretation of HIV surveillance data.

3. Building research capacity and sharing methodological lessons

   - Building capacity

     The research team was committed to strengthening individual and community research capacity through building research skills within the targeted communities and encouraging meaningful involvement in the study development, implementation, and dissemination of results. Approximately 50 community members were involved in conducting the study. This high level of participation has both raised awareness of HIV in the wider community and contributed to the building of research capacity in African communities.

   - Lessons learned

     Creative strategies were formulated to address challenges associated with the recruitment of hidden populations and the implementation of a potentially sensitive survey. The community advisory committee and working groups were crucial to the success of the study, particularly informing the survey development and recruitment. Many community members canvassed community organizations, events, public venues, and personal networks to recruit a wide range of community members to the study. This process was documented to create a resource for other researchers and community members who may be involved in future research in these or similar communities.

4.2 LIMITATIONS

There are several limitations that may impact on the quality and representativeness of the EAST data. First, because of challenges associated with recruiting participants from communities that are integrated into the general population, the selection of participants was non-random. The combination of recruitment methods we adopted was designed to reach a broad and varied population but we may have an over-representation of people with higher levels of education and people who may be more concerned about HIV and other health issues. Second, the survey information, with the exception of the HIV prevalence, was based on participants self-reporting to an interviewer or self-completing the sexual behaviour section. There is no way to confirm that participants provided accurate and truthful responses to all of the questions.

4.3 NEXT STEPS

Our hope is that this report will be used to inform HIV programs, services, and policy decisions for the targeted populations, and to stimulate community discussions, further interpretation, and recommendations for further data analysis and community action. To date, EAST has been presented at provincial, national, and international research conferences and at meetings in the black community. Plans are underway for a community forum where the application of the findings can be discussed, further dissemination plans can be developed, and future research projects for each community can be devised. The African and Caribbean Council in Ontario (ACCHO) will include the study in its dissemination and capacity-building plan, and use it to inform the development and implementation of the Public Health Agency of Canada (PHAC) A/C-track initiative for communities from countries where HIV is endemic.[26] Furthermore, the research team will continue to analyze the study data and provide comprehensive and detailed analyses through manuscripts and publications.

[26] A/C-track will monitor HIV and high risk behaviour trends over time in African and Caribbean communities in order to inform programs and services; it will also facilitate evaluation of interventions.

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