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ORIGINAL ARTICLE

HIV-associated risk factors among young Canadian Aboriginal and non-Aboriginal men who have sex with men

Katherine V Heath MSc[1], **Peter G A Cornelisse**[1], **Steffanie A Strathdee** PhD[1,5], **Anita Palepu** MD MPH[2,6], **Mary-Lou Miller** RN[1], **Martin T Schechter** OBC MD FRCP PhD[1,3], **Michael V O'Shaughnessy** OBC PhD[1,4,6] and **Robert S Hogg** PhD[1,3]

[1]*British Columbia Centre for Excellence in HIV/AIDS,* [2]*University of British Columbia, Department of Medicine,* [3]*University of British Columbia, Department of Health Care and Epidemiology,* [4]*University of British Columbia, Department of Pathology,* [5]*Currently affiliated with the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland and* [6]*St Paul's Hospital, University of British Colombia and the Ministry of Health, British Colombia, Canada*

Summary: Young Aboriginal men face marginalization distinct in cause but similar in pattern to those seen among men who have sex with men (MSM) and may be at increased risk for HIV infection. We compared sociodemographic characteristics and risk taking behaviours associated with HIV infection among MSM of Aboriginal and non-Aboriginal descent.

Data for this comparison were gathered from baseline questionnaires completed by participants in a cohort study of young MSM. Data collection included: demographic characteristics such as age, length of time residing in the Vancouver region, housing, employment, income and income sources; mental health and personal support; instances of forced sex and sex trade participation and; sexual practices with regular and casual male sex partners.

Data were available for 57 Aboriginal and 624 non-Aboriginal MSM. Aboriginal MSM were significantly less likely to be employed, more likely to live in unstable housing, to have incomes of $<$\$10,000 and to receive income assistance than non-Aboriginals (all $P<0.01$). Aboriginals also had higher depression scores ($P<0.01$), were more likely to report non-consensual sex ($P=0.03$), sexual abuse during childhood ($P=0.04$) and having been paid for sex ($P<0.01$). In the past year they were no more likely to have had sex with a male partner they knew to be HIV positive, to have had more than 50 male partners or to have unprotected anal insertive or receptive intercourse with their male partners (all $P>0.05$).

Our data indicate that among MSM, Aboriginal men are at increased risk of antecedent risk factors for HIV infection including sexual abuse, poverty, poor mental health and involvement in the sex trade.

Keywords: HIV, Aboriginal, native Canadians, gay men, prostitution, indigenous people

INTRODUCTION

Men self identified as gay or bisexual have historically experienced both social and economic marginalization manifested in poorer outcomes of mental and physical health. Men who have sex with men are more likely to suffer from social conflict, sexual abuse, involvement in paid sex work and low self-esteem[1–5]. These factors may be associated with the increased risk of depression, suicide ideation and suicide, substance abuse as well as economic deprivation within this community[6–10].

There is growing evidence that such social factors may also play a pivotal role in susceptibility to HIV infection. The influence of these factors is not well established but presumably, through a complex set of internal processes, mediates an increased susceptibility to sexual risk taking and

Correspondence to: Dr Robert S Hogg, British Columbia Centre for Excellence in HIV/AIDS, 611–1081 Burrard Street, Vancouver, British Columbia V6Z 1Y6, Canada.
E-mail: bobhog@hivnet.ubc.ca

initiation of injection drug use. Several studies have linked depression[11–13], low social support[14–16], poverty[17] and recreational drug use[18–20] to increased participation in high-risk sexual activities.

Young men of Aboriginal descent (First Nations, Inuit and Métis) face marginalization distinct in cause but similar in pattern to those seen among gay and homosexual men. Canada's Aboriginal population still suffers the consequences of institutionalized social segregation through the reserve system, geographic isolation, diminished health care availability and reduced educational and employment opportunities[21]. As a result Aboriginal men in general tend to be underemployed, less well educated and poorer than their non-Aboriginal counterparts[21,22]. Attendant psychosocial morbidities include an increased risk of substance abuse, sexual abuse, suicide and other mental health problems[21–24]. These inequities may predispose this subgroup to an increased risk of HIV infection within the community of gay and bisexual men. We determined whether baseline sociodemographic characteristics and risk taking behaviours associated with HIV infection of Canadian Aboriginal participants differed from those of non-Aboriginal participants within a cohort of young gay and bisexual men in Vancouver, Canada.

METHODS

Study subjects

Beginning in May of 1995 gay and bisexual men aged 18 to 30 years living in the Greater Vancouver region have been recruited through physician's offices, clinics and outreach for a prospective study of HIV incidence and risk behaviours. Men are eligible to participate if they self identify as gay, bisexual or report having sex with men. As this is a study of factors associated with incident HIV infection only those men who have not previously tested HIV seropositive are eligible to participate. Participants complete a confidential, self-administered questionnaire via mail and undergo HIV testing on an annual basis.

Study instrument

Baseline questionnaires gather information regarding demographic data including; ethnic background, age, length of time residing in the Vancouver region, type of housing, employment status, income sources and net income.

The questionnaire also assesses factors associated with mental health including a previously validated[25] 7-item version of the Centre for Epidemiologic Studies Depression scale (CES-D) and a question designed to assess level of direct personal support available to respondents. This item asks the number and relationship of people in the region who could provide personal support or friendship in day-to-day living or times of crisis. Participants are also asked whether they have ever experienced non-consensual sex (defined as sex you were forced or coerced into, including rape, sexual assault or childhood sexual abuse), the age at which the first instance had occurred (under age 12, ages 12 to 17 and over age 17) and the perpetrator of this abuse. Participants are asked whether they have been paid for sex (defined as exchanging sex for money, goods or drugs) ever in their lifetime and within the past year.

Finally, data regarding sexual practices in the previous 12-month period are recorded. Sexual activities comprise insertive and receptive oral, anal and vaginal intercourse with both male and female partners. Data collected include the total number of sexual partners and the frequency of condom use with both regular and casual partners. Regular partners are those with whom respondents had sex more than once a month on average, and casual partners are those with whom respondents had sex less than once a month on average. Participants are also asked whether they had sex in the past year with a man they knew at the time to be HIV positive.

Statistical analysis

For the purpose of this analysis, Aboriginal participants were defined as those who identified themselves as First Nations, Inuit and/or Métis. Comparisons between Aboriginal and non-Aboriginal participants were carried out using contingency table analysis, applying Fisher's exact tests for those comparisons with expected cell frequencies <5. Wilcoxon rank-sum tests were used for comparisons of medians for continuous variables. All reported P values were two sided.

As in previous analyses[5], frequencies for the CES-D scale were independently scored from 1 (never) to 5 (always) and summed, yielding a minimum possible score of 7 and a maximum of 35 with lower scores indicative of least depression. Type of housing was dichotomized as stable or unstable with unstable housing defined as hotels, rooming houses, shelters, hostels, squats or no fixed address.

RESULTS

Of the 681 eligible participants who had completed baseline questionnaires as of May 1998, 57 (8.4%) were identified as Aboriginal and 624 (91.6%) as non-Aboriginal. Overall, 11 individuals tested HIV positive at baseline, 2 Aboriginal participants (4%) and 9 non-Aboriginals (1%). In terms of participant recruitment, 60% of Aboriginal participants were recruited through clinics, 30% through outreach and 5% by physicians. Among non-Aboriginals, 29% were recruited through clinics, 53% through direct outreach and 13% through physicians offices. Recruitment method was undetermined for 5% of participants in both groups.

Table 1. Comparison of demographic characteristics of Aboriginal and non-Aboriginal men who have sex with men

	Aboriginal *n*=57 (%)	Non-Aboriginal *n*=624 (%)	*P* value
Age*	24 (IQR 21–28)	25 (IQR 23–28)	0.12
Length of time (years) residing in Vancouver*	7	5	0.24
Live in unstable housing	19 (34)	44 (7)	<0.01
Currently employed	28 (50)	452 (74)	<0.01
Total income <$10,000	23 (51)	159 (16)	<0.01
On income assistance (welfare/unemployment insurance)	30 (50)	102 (16)	<0.01

*Wilcoxon rank-sum test
IQR=interquartile range

Table 2. Comparison of physical and mental health status and sexual history of Aboriginal and non-Aboriginal men who have sex with men

	Aboriginal *n*=57 (%)	Non-Aboriginal *n*=624 (%)	*P* value
Median depression score*	15 (IQR 11–19)	13 (IQR 10–16)	<0.01
Social network size*	10 (IQR 4–15)	6 (IQR 4–12)	0.15
Forced sex (ever)	26 (47)	199 (33)	0.03
Perpetrator was a relative	13 (23)	55 (9)	<0.01
<Age 12	15 (26)	97 (16)	0.04
Age at first willing sex*	14 (IQR 12–16)	17 (IQR 14–19)	<0.001
Been paid for sex (ever)	37 (65)	128 (21)	<0.01
Been paid for sex (past 12 months)	30 (53)	69 (11)	<0.01
Been paid more for sex without condom	13 (23)	55 (9)	<0.01
Alcohol >20 drinks/week†	12 (21)	46 (7)	<0.01

*Wilcoxon rank-sum test
†Fisher's exact test: one drink=one ounce liquor, 335 ml of beer, or one 4 oz glass of wine
IQR=interquartile range

A summary of the demographic characteristics of Aboriginal and non-Aboriginal participants is shown in Table 1. There was no difference between Aboriginal and non-Aboriginal participants with respect to age (median age of 24 *vs* 25 respectively) or the length of time residing in Vancouver (7 *vs* 5 years respectively). However, Aboriginals were significantly less likely to be employed, more likely to live in unstable housing, to have total incomes of <$10,000 CDN and to receive income assistance in the form of welfare or unemployment insurance (UIC) (all $P<0.01$).

Table 2 shows the comparison of Aboriginal and non-Aboriginal participants on the basis of issues relating to mental health and sex trade involvement. Aboriginals had higher median depression scores ($P<0.01$) yet appeared to have larger social support networks (10 *vs* 6 persons among Aboriginals and non-Aboriginals respectively), although this difference was not statistically significant.

Almost 50% of Aboriginal men reported at least one episode of non-consensual sex which was significantly greater than that found among non-Aboriginals (33%) ($P=0.03$). Among Aboriginals, half of those who had experienced non-consensual sex reported that the perpetrator was a male or female relative while only 28% of non-Aboriginal

Table 3. Comparison of sexual risk behaviours in the preceding one-year period of Aboriginal and non-Aboriginal men who have sex with men

	Aboriginal *n*=57 (%)	Non-Aboriginal *n*=624 (%)	*P* value
Sex with known HIV+ man	9 (17)	102 (18)	0.84
>50 male partners in past year†	7 (13)	45 (8)	0.19
Anal receptive without condom	18 (35)	226 (41)	0.40
Anal insertive without condom	20 (39)	226 (41)	0.87

†Fisher's exact test

participants reported sexual abuse by a family member. Similarly, a significantly greater proportion of Aboriginal men were under the age of 12 years when the first instance of non-consensual sex occurred (P=0.04). Aboriginal men were also significantly younger than their non-Aboriginal counterparts at the time of first consensual intercourse (14 years *vs* 17 years of age, $P<0.01$). Aboriginal men were more likely to have been paid for sex either ever, or in the year preceding study entry (both $P<0.01$). Aboriginal men were also more likely overall to have ever been paid more by a client for having sex without a condom ($P<0.01$).

Table 3 compares sexual risk taking behaviours of Aboriginal and non-Aboriginal participants. Relative to non-Aboriginals, Aboriginal men were no more likely to have had sex with a male partner they knew to be HIV positive or to have had more than 50 male partners over the past year ($P>0.05$). Nor did Aboriginal and non-Aboriginal participants differ in having had either unprotected anal insertive or anal receptive intercourse with their male partners ($P>0.05$).

DISCUSSION

In our cohort of young gay and bisexual men, those self-identified as Aboriginal Canadians appear to be socially and economically disadvantaged in comparison to non-Aboriginal participants. Aboriginal men who have sex with men are also at an increased risk of psychosocial morbidities, sexual abuse and sex trade involvement, however, these disparities were not reflected in increased sexual risk taking behaviour in terms of unprotected sexual activities with regular or casual partners at baseline.

Aboriginal participants are clearly poor with half of the young Aboriginal men in our study unemployed, receiving income assistance and living in impoverished circumstances. These disparities are in agreement with census data recording an unemployment rate of 25% and income <$10,000 among 54% of Aboriginal people as compared to 10% and 34% respectively among Canadians overall[22]. Disparities in direct measurement of mental health specifically CES-D depression score are also apparent. Indicators of poor mental health are also seen within the Aboriginal community overall with rates of suicide, violent deaths and alcoholism greater than those seen in non-Aboriginal populations[23,24].

More distressing are the striking differences in history of sexual abuse between Aboriginal and non-Aboriginal participants with Aboriginal men being significantly more likely to have been sexually assaulted. It has been established that the impact of such abuse is increasingly devastating in cases in which the perpetrator is someone entrusted with the care of the child such as a close relative, or occurs in childhood as was noted among Aboriginal men in our population[26,27]. Studies have provided clear evidence that sexual abuse in childhood and adolescence is associated with increased participation in HIV risk behaviours as well as infection with HIV and other sexually transmitted diseases[28–30]. The link between prior sexual abuse and involvement in prostitution is also well documented[31,32].

Aboriginal men's increased involvement in commercial sex is also of great concern. In our cohort, Aboriginal men are more likely to have ever been involved in commercial sex. More importantly, they are continuing to exchange sex for goods at a much higher rate than non-Aboriginal men. Given the diminished economic circumstances among Aboriginal participants, it may be that commercial sex work is seen as one of few viable methods of earning a living. Prostitution in general has been associated with increased risk behaviours and subsequent HIV infection among male sex trade workers[33,34]. Furthermore, Hein *et al.*, in a survey of more than 1200 adolescents reported a univariate odds ratio of 12.7 for HIV infection associated with 'survival sex'[30]. The combination of increased risk of poor mental health, prior victimization and dependence on sex trade may be reflected in the inability to negotiate safe sexual practices with clients. Notably, this is borne out in our finding that 23% of the Aboriginal participants reported having accepted greater payment for having sex without a condom as compared to just 9% among non-Aboriginal men. Clearly, there is a danger that, over time, we may see increased acceptance of high-risk activities extended to include sex between these individuals and their regular and casual non-client sexual partners.

In this study, the inequities described above appear to have little impact on the sexual risk behaviours studied here which have been identified as direct risk factors for HIV infection. Thus far it appears that these underlying disparities have not culminated in a significantly increased risk of HIV infection among Aboriginal participants, however, with only 11 newly diagnosed infections recorded at baseline, the power to verify existing significant differences statistically is low. The data presented here are based on a cohort of young men not known to be HIV positive at study entry. Therefore, participants, whether Aboriginal or non-Aboriginal, may represent individuals at lower risk for HIV in terms of sexual risk taking than might be found in the general population of gay men. Aboriginal men participating may be at especially low risk in comparison to the general MSM Aboriginal population given that 65% were recruited through physicians offices or health clinics. In the United States some ethnic minorities have rates of infection well beyond those seen in Caucasian populations with the same behavioural risk factors[17,35,36]. In the course of continued follow-up we may see a continued pattern of greater HIV

incidence rates recorded among Aboriginal MSM in this cohort, mirroring these findings.

In summary, prior research has identified gay and bisexual men to be socially and economically marginalized. These individuals have been found to be at increased risk for poor mental health, engaging in commercial sex and other sexual behaviours which are associated with increased risk of HIV infection. Our data indicate that within the community restricted to men who have sex with men, Aboriginal individuals are at even greater risk of sexual abuse, poverty, poor mental health and involvement in the sex trade beyond that seen among non-Aboriginal gay and bisexual men. While these disparities are not reflected in increased instances of unprotected intercourse at baseline in our cohort, it is imperative that they be addressed for several reasons. Psychosocial morbidities in and of themselves are a pressing concern as they affect all aspects of an individual's socialization, productivity and well-being and may be amenable to change given culturally appropriate and timely interventions. Moreover, the identification of mental ill-health as an antecedent risk factor for HIV infection in other cohorts speaks of the importance of addressing underlying social issues in our attempts to reduce HIV risk behaviour within communities typically facing discrimination or otherwise marginalized in our society.

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