Relationship between disclosure of same-sex sexual activity to providers, HIV diagnosis and sexual health services for men who have sex with men in Vancouver, Canada

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ABSTRACT

OBJECTIVES: Men who have sex with men (MSM) report challenges to accessing appropriate health care. We sought to understand the relationship between disclosure of same-sex sexual activity to a health care practitioner (HCP), sexual behaviour and measures of sexual health care.

METHODS: Participants recruited through community venues and events completed a questionnaire and provided a blood sample. This analysis includes only individuals with self-reported HIV negative or unknown serostatus. We compared participants who had disclosed having same-sex partners with those who had not using chi-square, Wilcoxon Rank Sum and Fisher's exact tests and used logistic regression to examine those variables associated with receiving an HIV test.

RESULTS: Participants who had disclosed were more likely to have a higher level of education ($p<0.001$) and higher income ($p<0.001$), and to define themselves as "gay" or "queer" ($p<0.001$). Those who had not disclosed were less likely to report having risky sex ($p=0.023$) and to have been tested for HIV in the previous two years (adjusted odds ratio 0.23, 95% confidence interval: 0.16–0.34). There was no difference in undiagnosed HIV infection (3.9% versus 2.6%, $p=0.34$). Individuals who had disclosed were also more likely to have been tested for gonorrhea and syphilis, and more likely to have ever been vaccinated against hepatitis A and hepatitis B ($p<0.001$ for all).

CONCLUSIONS: While generally reporting lower risk behaviour, MSM who did not disclose same-sex sexual activity to their HCP did have undiagnosed HIV infections and were less likely to have been tested or vaccinated. Strategies to improve access to appropriate sexual health care for MSM are needed.

KEY WORDS: HIV; reproductive health; homosexuality; male; disclosure

La traduction du résumé se trouve à la fin de l'article.

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Gay, bisexual and other men who have sex with men (MSM) have unique health care challenges. HIV infection remains more prevalent in the MSM population than in any other group in North America.¹⁻⁴ In providing appropriate health care to MSM, health care professionals (HCPs) must first be aware that their male patients have sex with other men. Studies from the US have shown that HCPs who were aware of their patients' same-sex sexual activities were more likely to recommend appropriate disease screening, including HIV testing, appropriate immunizations and testing for other sexually transmitted infections (STIs).⁵

Despite this, there is evidence that a significant proportion of MSM have not disclosed their same-sex sexual activity to their HCP. A 2009 study in the US state of Massachusetts found that 21% of MSM had not disclosed their sexual orientation to their HCP, and that of HIV-negative individuals only 23% reported that their HCP had offered HIV testing, irrespective of disclosure of same-sex sexual activity.⁶ Other studies have reported similar findings.^{5,7} In the US, the Healthy People 2020 initiative has identified lesbian, gay, bisexual and transgender people (LGBT) as one of six underserved groups.⁸

There is a paucity of literature on the issue of MSM access to sexual health services. The lack of training of health and social

service workers in the provision of sexual health services to LGBT people has been identified as a policy issue in Canada.⁹ Population health determinants have been highlighted as important factors in the decision to "come out" to HCPs.^{10,11} There have been calls to approach HIV prevention among MSM using a sexual health framework.¹²⁻¹⁴

We used data from a cross-sectional survey of MSM in Vancouver to better understand disclosure of same-sex sexual activity by MSM to their HCPs. We sought to understand whether there are differences in socio-demographic characteristics and

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Table 1. Bivariate comparison of those who had disclosed same-sex sexual activity to their health care providers versus those who had not, Vancouver, 2008–2009

	N	No disclosure		Disclosure		p Value
		n		n		
Median age (IQR), years	924	30	(23–39)	32.0	(26–42)	<0.005
More than high school education						
No	175	61	(29.2%)	114	(16.0%)	<0.0001
Yes	746	148	(70.8%)	598	(84.0%)	
Area of residence*						
Metro Vancouver	796	176	(84.2%)	620	(87.4%)	0.0893
BC outside Metro Vancouver	30	8	(3.8%)	22	(3.1%)	
Canada outside BC	26	3	(1.4%)	23	(3.2%)	
Outside Canada	66	22	(10.5%)	44	(6.2%)	
Personal income before taxes						
≤\$19,999	226	87	(43.7%)	139	(19.7%)	<0.0001
\$20,000 to \$39,999	245	52	(26.1%)	193	(27.4%)	
\$40,000 to \$59,999	210	26	(13.1%)	184	(26.1%)	
≥\$60,000	222	34	(17.1%)	188	(26.7%)	
Self-reported sexual identity*						
Gay	743	133	(64.3%)	610	(85.9%)	<0.0001
Bisexual	105	49	(23.7%)	56	(7.9%)	
Straight	18	15	(7.2%)	3	(0.4%)	
Two-spirit	22	7	(3.4%)	15	(2.1%)	
Queer	20	1	(0.5%)	19	(2.7%)	
Other	9	2	(1.0%)	7	(1.0%)	

* Fisher's exact test used.

Different numbers of participants answered each question. Therefore, numbers may not sum to total number of participants. IQR=interquartile range.

undiagnosed HIV infection, risk behaviour for HIV and receipt of appropriate health care for MSM between participants who had disclosed their same-sex sexual activity to their HCP and those who had not.

METHODS

The ManCount Study was a seroprevalence survey of MSM conducted in Vancouver from August 1, 2008, to February 28, 2009. It is part of M-Track, a national enhanced surveillance (behavioural and biological) system for HIV and other sexually transmitted and blood-borne infections among MSM in Canada, led by the Public Health Agency of Canada. The study protocol was approved by the research ethics boards of the University of British Columbia and Health Canada.

Participants were recruited through venues that cater to MSM. We used a venue-based time-space sampling recruitment methodology based on a two-stage sampling plan, described previously.¹⁵

Individuals identifying as men aged 19 years or older who reported ever having had sex with other men were offered enrolment in the ManCount study. Men were excluded if they had previously completed the survey or were unable to complete the questionnaire in English. For this analysis, we included those who self-reported a negative or unknown HIV status and who answered the question on disclosure.

After providing informed consent, study participants completed an anonymous, self-administered questionnaire and provided an anonymous blood sample for testing for HIV, hepatitis C and syphilis. Laboratory procedures have been previously described.¹⁶ We asked participants, "Have you told a health care professional you have male sex partners?" to ascertain whether they had disclosed to their HCP that they have sex with men. "Undiagnosed HIV infection" was defined as any participant who had tested positive for HIV on the basis of the dried blood spot (DBS) results. "Risky sex" was defined as any unprotected anal intercourse with a partner with unknown or

positive HIV status. "Appropriate health care for MSM" was defined as having been tested for other STIs, such as hepatitis B, hepatitis C, syphilis and gonorrhea, and having ever been vaccinated against hepatitis A and B.

Bivariate analyses were conducted using the Wilcoxon Rank Sum, chi square and Fisher's exact tests comparing disclosers with non-disclosers.

We used logistic regression to identify socio-demographic and HIV risk variables that were independently associated with disclosure. The final model was selected by the minimization of the Akaike information criterion.¹⁷ The linearity of continuous variables on the log-odds scale was assessed using the cumulative sums of residuals.¹⁸

We then constructed confounder logistic regression models with propensity scores¹⁹ to estimate the effect of disclosure on HIV testing in the previous two years and ever. All analyses were performed using SAS® System for Windows, Version 9.2 (SAS Institute Inc., Cary, NC).

RESULTS

A total of 1,169 participants completed the survey, and 1,138 (97%) provided a DBS sample suitable for testing. Of these, 202 (18%) self-reported as HIV positive and 11 (1%) did not answer the disclosure question, leaving a total of 925 participants for the analysis. In the final analytic sample, a total of 211 individuals (23%) had not disclosed and 714 (77%) had disclosed.

Table 1 shows that the median age at study enrolment was 30.0 years for those who had not disclosed versus 32.0 years for those who had disclosed ($p<0.005$). Those who had disclosed were more likely to have a higher level of education ($p<0.0001$) and a higher income ($p<0.0001$), and to define themselves as "gay" or "queer" ($p<0.0001$).

We also found differences in reported HIV risk behaviours between those who had disclosed and those who had not (Table 2). Participants who had disclosed were more likely to have had more male sexual partners within the previous six months

Table 2. Bivariate analysis of risk behaviours comparing those who had disclosed same-sex sexual activity to their health care providers versus those who had not, Vancouver, 2008–2009

	N	No disclosure		Disclosure		p Value
		n	(%)	n	(%)	
IDU excluding prescription steroids (n=890)						0.0689
Never	789	164	(84.1)	625	(89.9)	
Yes, not in past 6 months	52	15	(7.7)	37	(5.3)	
Yes, in past 6 months	49	16	(8.2)	33	(4.7)	
Any anal sex P6M (n=895)						<0.0001
No	249	91	(44.8)	158	(22.8)	
Yes	646	112	(55.2)	534	(77.2)	
Male sexual partners P6M (oral or anal) (n=899)						<0.0001
None	77	36	(17.7)	41	(5.9)	
Only one	210	64	(31.5)	146	(21.0)	
2–5	324	59	(29.1)	265	(38.1)	
6–9	110	19	(9.4)	91	(13.1)	
10 or more	178	25	(12.3)	153	(22.0)	
Lifetime receptive anal sexual partners (n=818)						<0.0001
None	66	23	(13.9)	43	(6.6)	
Only one	75	27	(16.3)	48	(7.4)	
2–5	242	50	(30.1)	192	(29.5)	
6–9	117	22	(13.3)	95	(14.6)	
10 or more	318	44	(26.5)	274	(42.0)	
Self-assessed likelihood of acquiring HIV in lifetime (n=768)						0.406
Not likely	640	138	(85.7)	502	(82.7)	
Likely	128	23	(14.3)	105	(17.3)	
Risky sex* (HIV-negative participants only) (n=774)						0.0234
None	634	130	(88.4)	504	(80.4)	
UAI* in past 6 months	140	17	(11.6)	123	(19.6)	

* Risky sex for those self-reporting as HIV-negative included unprotected anal intercourse in the previous six months with partners of known HIV+ or unknown HIV status. Sexual activity was "risky" when reported level of condom use was less than 75% of the time.

Different numbers of participants answered each question. Therefore, numbers may not sum to total number of participants.

IDU= injection drug use; P6M=past six months; UAI=unprotected anal intercourse.

Table 3. Bivariate analysis of health services utilization variables comparing those who had disclosed same-sex sexual activity to their health care providers versus those who had not, Vancouver, 2008–2009

	N	No disclosure		Disclosure		p Value
		n	(%)	n	(%)	
HIV status according to DBS results (n=907)						0.341
Negative	881	197	(96.1)	684	(97.4)	
Positive	26	8	(3.9)	18	(2.6)	
HCV status according to DBS results (n=906)						0.0656
Negative	884	196	(95.6)	688	(98.1)	
Positive	22	9	(4.4)	13	(1.9)	
Ever been tested for HIV (n=923)						<0.0001
No	132	75	(35.9)	57	(8.0)	
Yes	768	122	(58.4)	646	(90.5)	
Unsure	23	12	(5.7)	11	(1.5)	
Tested for HIV in past 2 years (n=916)						<0.0001
No	283	115	(58.1)	168	(24.2)	
Yes	609	83	(41.9)	526	(75.8)	
Ever been tested for gonorrhea (n=922)						<0.0001
No	233	118	(56.7)	115	(16.1)	
Yes	613	71	(34.1)	542	(75.9)	
Unsure	76	19	(9.1)	57	(8.0)	
Ever been tested for syphilis (n=921)						<0.0001
No	265	135	(64.9)	130	(18.2)	
Yes	574	54	(26.0)	520	(72.9)	
Unsure	82	19	(9.1)	63	(8.8)	
Ever been tested for HCV (n=920)						<0.0001
No	228	112	(53.3)	116	(16.3)	
Yes	581	73	(34.8)	508	(71.6)	
Unsure	111	25	(11.9)	86	(12.1)	
Ever been vaccinated against hepatitis B (n=899)						<0.0001
No	139	67	(33.2)	72	(10.3)	
Yes	643	100	(49.5)	543	(77.9)	
Unsure	117	35	(17.3)	82	(11.8)	
Ever been vaccinated against hepatitis A (n=892)						<0.0001
No	160	72	(36.4)	88	(12.7)	
Yes	559	82	(41.4)	477	(68.7)	
Unsure	173	44	(22.2)	129	(18.6)	
Number of times tested for HIV in the past 2 years						0.0031
N responding	709	101		608		
Median (IQR)		1.0	(1.0–2.0)	2.0	(1.0–4.0)	

Different numbers of participants answered each question. Therefore, numbers may not sum to total number of participants.

DBS=dried blood spot; HCV=hepatitis C virus; IQR=interquartile range.

($p<0.0001$), any anal sex within the previous six months ($p<0.0001$) and more lifetime receptive anal sexual partners

($p<0.0001$). Among self-reported HIV-negative individuals, those who had disclosed were more likely to have reported unprotected

Table 4. Multivariable logistic regression predicting the odds of disclosure of same-sex sexual activity to health care professionals, Vancouver, 2008–2009

	Unadjusted		Adjusted	
	OR	(95% CI)	OR	(95% CI)
Age (per year older)	1.01	(0.99–1.03)	–	–
First language				
English	1.00	1.00		
Other	0.58	(0.38–0.89)	0.60	(0.36–0.98)
Education				
More than high school education	1.00	1.00		
High school or less	0.48	(0.32–0.73)	0.79	(0.46–1.35)
Personal income before taxes				
≤\$20,000 per year	1.00	1.00		
>\$20,000 per year	3.58	(2.46–5.21)	3.24	(2.06–5.10)
Self-reported sexual identity				
Gay	1.00	1.00		
Other than gay*	0.40	(0.26–0.60)	0.47	(0.28–0.78)
IDU excluding steroids				
Never	1.00	1.00	–	–
Yes	1.91	(1.33–2.73)	–	–
Lifetime receptive anal partners				
None	1.00	1.00		
Only one	1.04	(0.50–2.16)	1.16	(0.48–2.80)
2–5	1.86	(1.01–3.43)	1.50	(0.72–3.14)
6–9	2.50	(1.21–5.16)	1.95	(0.82–4.66)
10 or more	3.02	(1.64–5.58)	2.50	(1.20–5.20)
Risky sex in the past 6 months				
None	1.00	1.00		
Unprotected anal sex	1.68	(0.92–3.06)	–	–
Self-assessed likelihood of acquiring HIV in lifetime				
Unlikely	1.00	1.00		
Likely	1.76	(0.54–5.72)	–	–
Somewhat	2.49	(0.69–9.03)		

* “Other than gay” includes bisexual, queer, two-spirit, straight and other.

Different numbers of participants answered each question. Therefore, numbers may not sum to total number of participants.

OR=odds ratio; CI=confidence interval; IDU=intravenous drug use.

anal sex with a serodiscordant or unknown serostatus partner in the previous six months (20% vs. 12%; $p=0.023$).

Table 3 shows that there was no statistically significant difference in the proportion of participants who were HIV-positive according to DBS results between those who had not disclosed and those who had disclosed (8/205 [3.9%] versus 18/702 [2.6%], $p=0.341$). Thirty-one percent (8/26) of undiagnosed infections in this study were found among individuals who had not disclosed. Those who had disclosed were more likely to have ever been tested for HIV (646/714 [91%] among disclosers versus 122/209 [58%] among non-disclosers, $p<0.0001$) or to have been tested for HIV in the previous two years (526/694 [76%] versus 83/198 [42%], $p<0.0001$). Individuals who had disclosed were also more likely to have been tested for gonorrhea and syphilis (both $p<0.0001$) and more likely to have ever been vaccinated against hepatitis A and hepatitis B viruses, both at $p<0.0001$.

Multivariable logistic regression revealed that participants less likely to disclose were those whose first language was not English (odds ratio [OR] 0.60, 95% confidence interval [CI]: 0.36–0.98) and those who reported a sexual identity other than “gay” (OR 0.47, 95% CI: 0.28–0.78), and participants more likely to disclose were those whose income was \$20,000 or more (OR 3.24, 95% CI: 2.06–5.10) and those with 10 or more lifetime receptive anal sex partners (OR 2.50, 95% CI: 1.20–5.20) (Table 4).

Logistic regression analyses using propensity scores revealed that participants who had not disclosed were less likely to have been tested for HIV in the previous two years (adjusted odds ratio [AOR] 0.23, 95% CI: 0.16–0.34) or ever (AOR 0.17, 95% CI: 0.11–0.26). The propensity scores included all the variables from the logistic regression above, but additionally included age, ethnicity and club attendance.

DISCUSSION

In this cross-sectional survey of MSM in a large urban centre in Canada, we found that 23% of MSM with self-reported HIV-negative or unknown serostatus had not disclosed their same-sex sexual activity to their HCP. Those who had disclosed were more likely to be older, have a higher level of education, have higher income and speak English. This is consistent with previous findings by Bernstein et al. and Petroll and Mosack, in which older, more educated, white MSM were more likely to have disclosed.^{5,7} Not having English as a first language may serve as a communication or cultural barrier, despite the fact that the setting for this study was an ethnically diverse city.²⁰ Those who have lower income levels may be less likely to see a doctor and thus be less likely to disclose. Those who had more lifetime receptive anal sex partners were also more likely to disclose. This may be because participants with a substantial numbers of partners felt that their risk of acquiring HIV could be higher and thus felt more compelled to disclose to their HCP. Individuals who had not disclosed were less likely to have been tested for a number of different STIs and less likely to have been vaccinated against hepatitis A and B. This is consistent with other studies.⁵

The prevalence of disclosure of male sex partners to HCPs in our study is similar to that of several studies in the US, where the proportion of MSM not having disclosed same-sex sexual activity to their HCPs ranged from 21% to 39%.^{5–7} While the settings of these studies are similar to that of ours, one analysis, in which 21% had not disclosed, included participants who were both HIV-positive and HIV-negative. However, our Canadian setting may not be directly comparable with US settings owing to differences in the health care systems of the two countries.

Facilitators and barriers to disclosure to HCPs have been explored previously. In a qualitative study in the US, participants identified several themes that facilitated and prevented disclosure of same-sex sexual activity.²¹ Barriers included behaviours by the HCP that were perceived to be judgemental. Some facilitators that the study highlighted were “gay-friendly” behaviours by the HCP and environments. Healthy People 2020, a US Centers for Disease Control and Prevention (CDC) report, cites a lack of knowledgeable and culturally competent HCPs as a barrier to obtaining appropriate health care. Other barriers include some men being less “out” and not identified as part of the MSM community²² or having received judgemental health care in the past.¹² To counter this, HIV response efforts should aim to reduce homophobia in our society through appropriate sexual education in schools, enforcement of legislation to protect the human rights of LGBT people¹² and provision of non-judgemental and gender-sensitive health care.¹² Our findings support the recent recommendations from Wolitski and Fenton¹² to provide HCP training in MSM health and address structural and policy change efforts.

Despite non-disclosers reporting lower recent HIV risk behaviour, the proportion of undiagnosed infections did not differ significantly between disclosers and non-disclosers. Moreover, 31% (8/26) of undiagnosed HIV cases in our sample were found in non-disclosers. These observations suggest that a significant proportion of MSM are not receiving adequate sexual health care. Whether an HCP is aware of a person’s same-sex sexual activity or not should not be the sole basis for HIV screening.

In the US and Canada, the proportion of the HIV-infected MSM population whose condition is undiagnosed ranges from 19% to 22%.^{2,23} We found in this study that in 13% of HIV-positive individuals HIV was undiagnosed. HIV screening has evolved from a risk-based strategy to include broader population screening. In 2006, to overcome the limitations of risk-based screening, the CDC revised its recommendations for HIV testing to include all patients after they have been notified that testing will be performed (unless the patient opts out), without the need for pre-test counseling.²⁴ Different organizations have provided different recommendations. In April 2013, the US Preventive Services Task Force recommended that all pregnant and non-pregnant adults aged 15–65 be screened for HIV.²⁵ Risk-based testing policies may miss some individuals until they disclose their risk behaviour to HCPs. The regional health authority in which this study was based has recently established new HIV testing guidelines that suggest testing all patients who present to an acute care hospital or to community care.²⁶ Both targeted approaches and population-based screening may have value as HIV-testing strategies.

Our study has several limitations. Our time location sampling strategy enabled us to randomly sample individuals who attend venues oriented to MSM but did not enable us to generalize our results to MSM who do not attend such venues. For future research, different sampling strategies (online, recruitment from doctors’ offices) may need to be employed. As a cross-sectional study, the directions of the associations found are unclear. For example, it is impossible to determine whether those who had disclosed did so because they were proactive about their health or

whether, following their disclosure, the HCP was prompted to order an HIV test. Reporting bias may also be present. However, we do not believe that this would have introduced a differential bias. There is also the potential for misclassification due to recruitment in community venues, and the small number of undiagnosed infections could have limited our ability to detect differences.

In conclusion, in addition to sustaining and enhancing efforts to prevent HIV among MSM, other sexual health services should be enhanced. Moreover, sexual health should be thought of more broadly as an underlying determinant of health. Our study suggests that the proportion of undiagnosed HIV among non-disclosers and disclosers is not significantly different. Further research is warranted to look at the reasons behind non-disclosure.

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RÉSUMÉ

OBJECTIFS : Les hommes ayant des relations sexuelles avec des hommes (HARSAH) disent avoir du mal à accéder à des soins de santé appropriés. Nous avons cherché à comprendre le lien entre la divulgation des relations homosexuelles à un professionnel de la santé (PS), le comportement sexuel et les indicateurs de soins de santé sexuelle.

MÉTHODE : Les participants, recrutés dans des lieux et lors d'activités communautaires, ont rempli un questionnaire et fourni un échantillon de sang. Notre analyse n'a porté que sur les sujets ayant déclaré être séronégatifs pour le VIH ou ignorer leur état sérologique. À l'aide du test du khi-carré, du test de Wilcoxon et de la méthode exacte de Fisher, nous avons comparé les participants ayant divulgué le fait d'avoir des relations sexuelles avec d'autres hommes à ceux qui n'avaient pas divulgué leurs relations homosexuelles à un PS; au moyen d'une analyse de régression logistique, nous avons examiné les variables associées au fait d'avoir reçu un test de dépistage du VIH.

RÉSULTATS : Les participants ayant divulgué leurs relations homosexuelles étaient plus susceptibles d'avoir un niveau de scolarité plus élevé ($p<0,001$) et un revenu plus élevé ($p<0,001$) et de se définir comme étant « gais » ou « queer » ($p<0,001$). Ceux qui n'avaient pas divulgué leurs pratiques homosexuelles à leur PS étaient moins susceptibles d'avoir eu des relations sexuelles à risque ($p=0,023$) et d'avoir été dépistés pour le VIH au cours des deux années antérieures (rapport de cotes ajusté de 0,23, intervalle de confiance de 95 % : 0,16–0,34). Il n'y avait pas de différence dans les infections à VIH non diagnostiquées (3,9 % c. 2,6 %, $p=0,34$). Les sujets ayant divulgué leurs relations homosexuelles étaient aussi plus susceptibles d'avoir été dépistés pour la gonorrhée et la syphilis et d'avoir été vaccinés contre l'hépatite A et l'hépatite B ($p<0,001$ pour tous).

CONCLUSIONS : Bien qu'ils déclarent en général des comportements à moindre risque, les HARSAH qui n'avaient pas divulgué leurs relations homosexuelles à leur PS avaient parfois des infections à VIH non diagnostiquées, et ils étaient moins susceptibles d'avoir été dépistés ou vaccinés. Des stratégies pour améliorer l'accès aux soins de santé sexuelle adaptés aux HARSAH sont nécessaires.

MOTS CLÉS : VIH; santé génésique; homosexualité masculine; divulgation