HHS Public Access

Author manuscript

Int J Drug Policy. Author manuscript; available in PMC 2018 May 01.

Published in final edited form as:

Int J Drug Policy. 2017 May ; 43: 113–121. doi:10.1016/j.drugpo.2017.02.003.

Awareness and understanding of HIV non-disclosure case law among people living with HIV who use illicit drugs in a Canadian setting

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Abstract

Background—In 2012, the Supreme Court of Canada (SCC) ruled that people living with HIV (PLWH) could face criminal charges if they did not disclose their serostatus before sex posing a "realistic possibility" of HIV transmission. Condom-protected vaginal sex with a low (i.e., <1500 copies/mL) HIV viral load (VL) incurs no duty to disclose. Awareness and understanding of this ruling remain uncharacterized, particularly among marginalized PLWH.

Methods—We used data from ACCESS, a community-recruited cohort of PLWH who use illicit drugs in Vancouver. The primary outcome was self-reported awareness of the 2012 SCC ruling, drawn from cross-sectional survey data. Participants aware of the ruling were asked how similar their understanding was to a provided definition. Sources of information from which participants learned about the ruling were determined. Multivariable logistic regression identified factors independently associated with ruling awareness.

Results—Among 249 participants (39% female), median age was 50 (IQR: 44–55) and 80% had a suppressed HIV VL (<50 copies/mL). A minority (112, 45%) of participants reported ruling awareness, and 44 (18%) had a complete understanding of the legal obligation to disclose. Among those aware (n = 112), newspapers/media (46%) was the most frequent source from which participants learned about the ruling, with 51% of participants reporting that no healthcare providers had talked to them about the ruling. Ruling awareness was negatively associated with VL suppression (AOR:0.51, 95% CI:0.27,0.97) and positively associated with recent condomless sex vs. no sex (AOR:2.00, 95% CI:1.03,3.92).

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Authors' contributions

SP, AK, VN and MJM conceived the idea for this analysis. RH, JM, MJM, JS and TK contributed to design and acquisition of data. Data preparation and statistical analysis were conducted by SD and SP, respectively, with assistance from HD. Data interpretation was performed by SP, AK, and MJM. SP drafted the initial manuscript with support from MJM and AK, and all authors contributed to the final version. All authors have critically reviewed and approved the final manuscript.

Conclusion—Most participants were not aware of the 2012 SCC ruling, which may place them at risk of prosecution. Discussions about disclosure and the law were lacking in healthcare settings. Advancing education about HIV disclosure and the law is a key priority. The role of healthcare providers in delivering information and support to PLWH in this legal climate should be further explored.

Keywords

HIV disclosure; Criminalization; Supreme Court of Canada; illicit drug use; Canada; HIV; antiretroviral therapy

INTRODUCTION

The insight that HIV RNA plasma viral load (VL) suppression through optimal adherence to antiretroviral therapy (ART) dramatically reduces the risk of onward HIV transmission (Grulich et al., 2015; Cohen et al., 2015; Montaner et al., 2006; Rodger et al., 2014) has led to the implementation of Treatment-as-Prevention (TasP)-based strategies in many settings worldwide (WHO, 2012). This approach seeks to normalize HIV testing and to facilitate and support immediate access to HIV treatment and care (Montaner et al., 2010b), and has been shown to reduce HIV/AIDS morbidity, mortality and viral transmission (Montaner et al., 2010a, 2010b). However, structural barriers continue to limit the full realization of the individual and community-level benefits of early and sustained ART exposure among people living with HIV (PLWH), particularly within marginalized and criminalized communities (Milloy, Montaner, & Wood, 2014; UNAIDS, 2014). In at least 61 countries, PLWH have been prosecuted for HIV transmission, exposure, or non-disclosure (Bernard & Cameron, 2016). Punitive criminal and HIV-specific laws may directly undermine HIV prevention and treatment efforts to normalize HIV (Moyer & Hardon, 2014).

The criminalization of HIV non-disclosure has been shown to represent a structural barrier to the healthcare engagement of PLWH (Mykhalovskiy, 2015; O'byrne, Bryan, & Roy, 2013a; Patterson et al., 2015b). The tension between public health and criminal justice system approaches to HIV prevention is arguably most acutely felt by marginalized and otherwise criminalized groups, including PLWH who use illicit drugs. Studies consistently show that exposure to the criminal justice system is one of the most important barriers to engagement with HIV treatment and care (Cescon et al., 2011; Small, Kerr, Charette, Schechter, & Spittal, 2006, Suárez-García et al., 2016; Werb et al., 2008). People who use illicit drugs confront intersecting axes of disadvantage and stigma, experience high levels of surveillance from the criminal justice system, and face considerable social and structural barriers to retention in HIV treatment and care (Cescon et al., 2011; Kuchinad et al., 2016; Small et al., 2006; Suárez-García et al., 2016; Werb et al., 2008).

Among countries with a history of prosecutions for HIV non-disclosure, exposure or transmission, Canada has one of the most aggressive approaches to the use of the criminal law against PLWH (Bernard & Bennett-Carlson, 2012). At least 181 people have faced charges for HIV non-disclosure since the late 1980s (Patterson et al., 2016), with socio-economically marginalized individuals overrepresented (Canadian HIV/Aids Legal Network,

2014). In the absence of HIV-specific laws, Canadian prosecutors apply existing criminal laws (predominantly sexual assault laws) to cases of HIV non-disclosure, guided nationally by precedents set by the Supreme Court of Canada (SCC). In October 2012, the SCC set a new legal test to guide HIV non-disclosure prosecutions (Supreme Court of Canada, 2012a, 2012b), ruling that PLWH who fail to disclose their HIV status to sexual partners before sex that poses a "realistic possibility" of HIV transmission could be convicted of aggravated sexual assault. The court clarified that condom-protected vaginal sex with a low plasma HIV RNA VL (defined by the court as below 1500 copies/mL) would be sufficient to avoid the legal obligation to proactively disclose to sexual partners. While the SCC suggested that the interpretation of the "realistic possibility" test may vary based on case-specific circumstances and scientific advances (Supreme Court of Canada, 2012b) (and lower courts have deviated from the SCC's ruling (Provincial Court of Nova Scotia, 2013)) PLWH must assume the strictest interpretation to protect themselves from prosecution.

In releasing its 2012 ruling, the SCC increased the reach of criminal liability for HIV non-disclosure in Canada past that which was previously established by the SCC in its 1998 ruling in R v. Cuerrier (Grant, 2013; Supreme Court of Canada, 1998). Clinicians, public health experts, and human rights activists have criticised the SCC's ruling that both condom use and a low VL are required to avoid a "realistic possibility" of HIV transmission, maintaining that this ruling is based on conceptions of HIV transmission risk inconsistent with scientific evidence (Canadian HIV/Aids Legal Network et al., 2012; Kazatchkine, Bernard, & Eba, 2015; Loutfy et al., 2014), and cautioning that this revised legal test may disproportionately impact the most marginalized PLWH, who experience barriers to effective engagement with HIV treatment and care (Symington, 2013).

Canadian healthcare providers have expressed concern over suboptimal awareness and understanding of the current legal obligation to disclose HIV serostatus to sexual partners among PLWH (Savage, Braund, & Stewart, 2014). However, awareness and understanding of the legal obligation to disclose HIV serostatus to sexual partners remain largely unexplored among the most marginalized Canadian PLWH (Patterson et al., 2015b). Furthermore, few studies have directly explored opinions of PLWH regarding the preferred role of health and social care providers in providing information and support around HIV disclosure and the law. There is an urgent need to clarify the extent to which Canadian PLWH who use illicit drugs are aware of the current legal obligation to disclose to sexual partners, to inform public health policies and strategies to advance health and rights in the current legal climate among this marginalized and otherwise criminalized population.

To address this need, we used data from a community-recruited cohort of PLWH using illicit drugs in Vancouver to determine the prevalence and correlates of awareness of the 2012 SCC ruling on HIV non-disclosure. We also assessed sources of information and completeness of understanding of the legal obligation to disclose, and determined the preferred role of healthcare providers in discussions around HIV disclosure and the law.

METHODS

Data sources

We used data from the AIDS Care Cohort to evaluate Exposure to Survival Services (ACCESS), an ongoing prospective cohort of PLWH in Vancouver who have used illicit drugs (Strathdee et al., 1998). Individuals were eligible for the study if they were HIV-positive, aged at least 18 years and had used illicit drugs other than cannabis at least once in the 30 days before completing the baseline survey. Participants were recruited from community settings by word-of-mouth, postering and extensive street-based outreach in Vancouver's Downtown Eastside (DTES) area, the epicenter of an extensive HIV outbreak among people who use injection drugs beginning in the mid-1990s (Patrick et al., 1997). In recent years, it has also been the setting of an ongoing TasP-based initiative to scale up HIV testing and ART uptake, particularly among illicit drug users (Montaner et al., 2010a, 2010b). The DTES has an active open drug market, in addition to high levels of drug use, homelessness and poverty.

At baseline and during semi-annual study visits, ACCESS participants complete an interviewer-administered questionnaire, which elicits information on lifetime and recent characteristics, behaviours and exposures. Participants also receive an examination from a nurse, which includes HIV clinical monitoring. A longitudinal HIV clinical profile is available for ACCESS participants through a confidential linkage to the Drug Treatment Program (DTP), housed at the BC Centre for Excellence in HIV/AIDS in Vancouver. The DTP administers all HIV/AIDS treatment, including medications and clinical monitoring, free of charge to PLWH in BC through a universal healthcare program (Patterson et al., 2015a).

Data collection instrument

To collect participant information on awareness and understanding of the 2012 SCC ruling on HIV non-disclosure, a novel supplementary survey was devised in collaboration with community and legal partners. Questions were selected following a comprehensive literature review (Patterson et al., 2015b) and community consultation. The content and wording of the survey questions were community-driven, and proposed questions were piloted with ACCESS frontline research staff prior to use, to identify and remedy problems with question comprehensibility and flow. Interviewers underwent training on the criminalization of HIV non-disclosure in Canada to ensure their own understanding of the case law. Referral services and information on HIV disclosure and the law were made available to participants (Canadian HIV/Aids Legal Network, 2014; Positive Living Society of British Columbia, 2015).

Ethical considerations

The ACCESS study and supplement were reviewed and approved by the University of British Columbia/Providence Healthcare Research Ethics Board. The supplement was also approved by the Office of Research Ethics at Simon Fraser University. ACCESS participants provided written informed consent to participate in the study and are compensated $30 for each study visit.

Eligibility criteria

All ACCESS participants who presented to complete a baseline or scheduled follow-up interview between June and October 2015 were invited to complete the voluntary supplement.

Measures

Awareness of the 2012 SCC ruling—The primary outcome variable was self-reported awareness of the 2012 SCC ruling, elicited by response to the question: "In 2012, the SCC made a new ruling regarding the conditions under which a person living with HIV has to disclose his or her HIV status to a sexual partner. Are you aware of this new ruling?" Participants self-reporting "Yes" were considered to be aware.

To identify factors associated with the awareness of the ruling, we incorporated explanatory variables identified following a literature review (Patterson et al., 2015b), including: age (per year increase); sex (male vs. female); self-reported Indigenous ancestry (Indigenous vs. non-Indigenous); injection drug use (yes vs. no); homelessness, defined as living on the streets or with no fixed address (yes vs. no); high school completion or greater (yes vs. no); sex work, defined as exchange of sex for money, drugs, clothing, or other property (yes vs. no); violence, defined as experience of violence other than sexual violence or bad dates (yes vs. no); sexual orientation, defined as self-identifying as heterosexual/straight vs. gay/lesbian/two-spirited/bisexual (yes vs. no); experience being jacked up, defined as stopped, searched or detained by police without arrest (yes vs. no); incarceration, defined as being in detention, prison or jail (yes vs. no); being in a stable relationship, defined as being legally married/common law or having a regular partner (yes vs. no); recent sexual activity, presented as a three-level variable, defined as no sex, including no vaginal/anal sex vs. vaginal/anal sex with 100% condom use vs. vaginal/anal sex with <100% condom use; number of years since HIV diagnosis; and receipt of ART (yes vs. no).

All non-fixed variables referred to behaviours or exposures in the six-month period before the study interview, except for homelessness and relationship status, which referred to current status. Using data from the confidential linkage to the DTP, we determined whether participants had achieved HIV VL suppression (<50 copies/mL) in the most recent VL measurement within the six months before the interview.

Understanding of the legal obligation to disclose—After assessing awareness of the 2012 SCC ruling, a concise definition of the legal obligation to disclose, based on the 2012 SCC ruling, was reviewed with all participants (Appendix A). Among participants self-reporting ruling awareness, we determined consistency of previous understanding of the legal obligation to disclose with the reviewed definition, measured by the question "How similar is this definition to what you had previously understood about the laws relating to HIV disclosure?" Responses were dichotomized into "the same" vs. "mostly the same/mostly different/completely different". Participants responding "the same" were considered to demonstrate a complete understanding.

Sources of information about the 2012 SCC ruling—Among participants self-reporting ruling awarenes, we identifed sources from which they learned about the ruling (healthcare providers; AIDS Service Organisations [ASOs]; service provider [not ASO]; newspapers/media; friends; other). For each source reported, we determined the proportion of participants who demonstrated a complete understanding of the case law, as a basic indicator of the quality of information received. Participants who self-reported awareness of the ruling were also asked to specify which healthcare providers (e.g., HIV physician, general practitioner [GP], nursing staff, peer worker, etc.,) had talked to them about the HIV non-disclosure case law.

Existing and preferred support services for HIV disclosure—Satisfaction with HIV disclosure support services was assessed using a 5-point Likert scale, measuring agreement with the statement "I am satisfied with the support services currently available in my community to help PLWH navigate HIV disclosure to sexual partners". Responses were dichotomized into Strongly Agree/Agree v. Strongly Disagree/Disagree/Neutral. Participants were asked to identify the type of healthcare providers (if any) that they would feel comfortable talking to about HIV disclosure and the law.

Statistical analysis

Variable distributions were characterized using descriptive statistics (median and interquartile range [IQR] for continuous variables and n [%] for categorical variables). Socio-demographic, behavioural, and clinical characteristics were compared between participants who self-reported awareness of the ruling and those who did not, using Pearson's -squared test (or the Fisher's exact test when the count was <5) for categorical variables, and the Kruskal Wallace test for continuous variables. Multivariable logistic regression identified independent correlates of awareness of the ruling. Candidates for model inclusion were variables demonstrating a statistical significance of $p < 0.2$ in bivariable analysis, or variables considered to influence awareness of the ruling following a priori literature review. Where data were missing, median imputation was used to preserve statistical power. For the variable "years since HIV diagnosis", missing values (n = 10) were imputed using years since first CD4 cell count. For the variable "VL suppression", missing values were imputed using self-reported VL (n = 3), or if unavailable (n = 3), using the most prevalent response (Engels & Diehr, 2003).

After testing normality assumptions and assessing collinearity, the final model was selected using a backwards selection process, guided by minimizing the Akaike Information Criterion, and maintaining Type III P values. P values were two-sided and considered statistically significant at $\alpha < 0.05$. All statistical analyses were conducted using R version 3.1.0 (2014-04-10) "Spring Dance".

RESULTS

Of the 462 ACCESS participants who completed a semi-annual study interview between June and December 2015, 249 (54%) completed the supplement, thus were included in the analytic sample. Within the analytic sample, 98 (39%) participants were female, with 92 (37%) participants having ever experienced incarceration. In the preceding six months, 137

(55%) participants had used injection drugs, 244 (98%) had received ART, and 199 (80%) had achieved HIV VL suppression (Table 1). Of the 106 (43%) participants reporting recent sex, only 45 (42%) engaged in condom-protected sex with a suppressed HIV VL, thus would face no legal obligation to disclose based on a strict interpretation of the legal test presented in the 2012 SCC ruling.

Awareness and understanding of the 2012 SCC ruling

Overall, 112 (45%) participants self-reported awareness of the 2012 SCC ruling (Table 1). Only 44 (18%) participants reported a complete understanding of the legal obligation to disclose. In the adjusted model, ruling awareness was positively associated with recent condomless sex vs. no sex (adjusted odds ratio [AOR]: 2.00, 95% Confidence Interval [CI]: 1.03–3.92), and negatively associated with achievement of HIV VL suppression (AOR: 0.51, 95% CI: 0.27–0.97) (Table 2).

Sources of information about the 2012 SCC ruling

Among participants aware of the 2012 SCC ruling (n = 112), newspapers/media, healthcare providers, friends/peers and ASOs were the most frequently reported sources from which participants learned about the ruling (reported by 46%, 27%, 21% and 20% participants, respectively) (Table 3). Among participants aware of the ruling (n = 112), 31 (28%) individuals reported that their HIV physician or GP had talked to them about the HIV non-disclosure case law. Half (n = 57, 51%) of participants who were aware of the ruling reported that no healthcare provider had talked to them about the HIV non-disclosure case law (Table 3). Among those aware of the ruling, participants who reported that no healthcare provider had talked to them about the ruling were less frequently represented among participants who reported a complete understanding of the case law compared to an incomplete understanding (34% vs. 62%, p = 0.004) (Table 3).

Existing and preferred support services for HIV disclosure

Self-reported satisfaction with HIV disclosure support services was high (n = 185, 74%) within this analytic sample, but notably higher among participants who were aware compared to those unaware of the ruling (85% vs. 66%, p < 0.001). Almost all participants (n = 241, 97%) reported that they would feel comfortable talking to a healthcare provider about HIV disclosure and the law (Table 4). Specifically, a majority of participants reported that they would feel comfortable talking to their regular HIV physician (n = 140, 56%) or GP (n = 135, 54%) about the HIV non-disclosure case law, with fewer participants reporting that they would feel comfortable discussing this topic with a non-regular physician (n = 77, 31%) (Table 4).

DISCUSSION

This is the first quantitative study to evaluate awareness of the landmark 2012 SCC ruling on HIV non-disclosure, which revised and increased the reach of criminal liability for HIV non-disclosure to sexual partners in Canada. Within a community-recruited Canadian cohort of PLWH who use illicit drugs, less than half of participants were aware of the 2012 SCC ruling on HIV non-disclosure. Most PLWH in this marginalized and otherwise criminalized

cohort lack critical information regarding the current legal obligation to disclose, which may put them at risk of prosecution.

Our findings are consistent with previous work evaluating awareness of the legal obligation to disclose in the wake of the 1998 SCC ruling on HIV non-disclosure in R v. Cuerrier(Supreme Court of Canada, 1998). In qualitative interviews among 34 Canadian MSM in 2008, HIV-positive participants expressed confusion about the legal obligation to disclose (Adam, Elliott, Husbands, Murray, & Maxwell, 2008), a response that was similarly echoed in focus group discussions among PLWH in Ontario in 2010 (Mykhalovskiy, 2011). Poor awareness of the legal obligation to disclose to sexual partners was also exhibited in focus group discussions among female sex workers in Vancouver in 2008 (Montaner, Pacey, Pelltier, Tyndall, & Shannon, 2008), and more recently among women living with HIV in Vancouver (Medjuck, Seatter, Summers, & Sangam, 2015), and Ontario (Kapiriri et al., 2012; Kapiriri, Tharao, Muchenje, Masinde, & Ongoiba, 2016).

Participants in this cohort may be aware of the existence of HIV non-disclosure prosecutions, despite being unaware of the current conditions under which PLWH can face a legal obligation to disclose. Quantitative data drawn from surveys conducted between 2010–2012 among MSM (O'byrne, Bryan, & Woodyatt, 2013b; O'byrne, P., Bryan, & Roy, 2013c), PLWH (Calzavara, Allman, Worthington, Tyndall, & Adrien, 2012) and the general Canadian population (Adam, Elliot, Corriveau, Travers, & English, 2012) have estimated awareness of HIV non-disclosure prosecutions to range from 87–96%. Analyses conducted in other international settings have similarly reported that the majority of PLWH are aware of the existence of HIV criminal laws (Galletly, Difranceisco, & Pinkerton, 2009; Galletly, Glasman, Pinkerton, & Difranceisco, 2012a; Galletly, Pinkerton, & Difranceisco, 2012b; Weatherburn, Hickson, Reid, Jessup, & Hammond, 2006). Critically, however, previous work supports that most PLWH lack a complete understanding of the legal conditions under which they may face criminal charges (Dodds, Bourne, & Weait, 2009; Phillips & Schembri, 2016; Sprague & Strub, 2012; Weatherburn et al., 2006). Lacking a complete understanding of the application of HIV criminal laws may compromise the ability of PLWH to make informed decisions to avoid prosecution, and optimise their health and rights.

In adjusted models, awareness of the 2012 SCC ruling was negatively associated with HIV VL suppression. A possible interpretation of this finding is that awareness of the ruling represents a barrier to effective healthcare engagement for marginalized PLWH, due to concerns about the limits of confidentiality in the healthcare setting and the potential for exposure of medical information in the current legal climate, as previously reported in the Canadian literature (Mykhalovskiy, 2011; O'byrne et al., 2013b, 2013c). Previous work in the United States has shown that some PLWH believe it is reasonable to avoid accessing HIV treatment in settings with HIV criminal laws due to fear of HIV-related prosecutions (Sprague & Strub, 2012). Similarly, a negative association between residence in jurisdictions with HIV criminal laws and ART adherence has been reported in the literature (Phillips et al., 2012).

The negative association between ruling awareness and HIV VL suppression observed in this analysis is a concern, given the vast differences in HIV transmission risk messaging

promoted by criminal justice and public health systems (Haire & Kaldor, 2015). Combination HIV prevention approaches are built on robust empirical evidence that the likelihood of onward viral transmission approaches zero with achievement of HIV VL suppression (Grulich et al., 2015; Cohen et al., 2015; Rodger et al., 2014). However, VL suppression alone may be insufficient to avert criminal liability for HIV non-disclosure in Canada (Supreme Court of Canada, 2012b). This disparity in the interpretation of risk across public health and criminal justice systems has been identified as a challenge by healthcare providers when counselling PLWH on HIV disclosure and the law (O'byrne & Gagnon, 2012). It is critical that PLWH who are optimally engaged in HIV treatment and care, and thus positioned to benefit from prevention and treatment benefits of ART, are informed of their legal obligation to disclose to avoid prosecution.

The majority of participants reported a willingness to receive information about HIV disclosure and the law from healthcare providers. However, despite almost all participants demonstrating optimal engagement with HIV treatment and care, half of those aware of the ruling reported that no healthcare providers had talked to them about this issue. This is regrettable, given that participants who had talked to a healthcare provider about HIV non-disclosure case law were more likely to demonstrate a complete understanding of the legal obligation to disclose. The media emerged as a key source from which participants learned about the SCC ruling, consistent with previous Canadian work (Adam et al., 2012; Kapiriri et al., 2016). This is disconcerting, given the often inflammatory and sensationalist media reporting of HIV non-disclosure prosecutions (CBC News, 2011; Fong, 2006), which frequently misrepresent medico-legal information, and fuel HIV-related stigma and public misconceptions about HIV (Adam et al., 2012; Kirkup, 2014; Mykhalovskiy & Sanders, 2008).

The lack of healthcare provider-led discussions about HIV disclosure and the law reported in this cohort may be explained by the fact that PLWH who use illicit drugs experience significant comorbidities and social challenges, including ongoing injection drug use, a high prevalence of hepatitis C co-infection and mental health concerns, and are historically harder to engage in healthcare services (Beyrer et al., 2010). As such, management of acute health issues may be prioritised over more distal concerns related to HIV disclosure and the law during clinical consultations. However, limited discussions of this nature may also be a manifestation of provider uncertainty in the current legal climate. Previous qualitative work conducted both before (Mykhalovskiy, Betteridge, & Mclay, 2010; Mykhalovskiy, 2011; O'byrne & Gagnon, 2012) and after (Savage et al., 2014) the 2012 SCC ruling revealed that many healthcare providers working in the HIV/AIDS sector lack clarity around the legal obligation to disclose, which may influence their willingness to provide counselling on HIV disclosure and the law. During focus groups in Ontario, healthcare providers revealed uncertainty regarding their roles and responsibilities related to the dissemination of legal information to patients (O'Byrne & Gagnon, 2012).

While advancing education about HIV disclosure and the law is a key priority, it is important to acknowledge the legal and professional complexities that may arise when healthcare providers adopt the responsibility of sharing legal information with patients. Trained legal professionals are best equipped to provide PLWH with accurate and comprehensive legal

information and advice on HIV non-disclosure and the law, and early referral to legal services should be encouraged in healthcare settings to ensure providers do not surpass their area of expertise, and to guarantee that accurate legal information is shared with PLWH in a setting that maximises confidentiality and safety. While some guidance has been made available for health and service providers caring for PLWH in the current legal climate by community and clinical organisations and legal agencies in the Canadian setting (Canadian HIV/Aids Legal Network, 2004, 2012; Gagnon, 2013; Positive Women's Network and BC Women's Hospital and Health Centre, 2015; Pacific Aids Network, 2016), comprehensive guidelines outlining best practice and professional standards for health and social care providers are lacking, despite previous calls for better clarification of the responsibilities of providers caring for PLWH in the current legal context (Bryan & O'byrne, 2012).

It is important to acknowledge the high prevalence of sexual inactivity in this cohort. Given that less than half of participants were sexually active, being aware of HIV non-disclosure case law may not be a priority for the majority of this analytic sample. However, while some studies suggest that PLWH who are sexually inactive or in monogamous relationships are less concerned by living under the threat of HIV non-disclosure prosecutions (Adam, Elliott, Corriveau, & English, 2014), other work has shown that concerns about HIV criminal laws persist despite sexual conduct or disclosure practices (Mykhalovskiy, 2011), driven by the fear of false accusations from previous partners and shifted burden of proof to the partner living with HIV in criminal trials (Adam et al., 2014). Practicing sexual abstinence may be a conscious strategy used by PLWH, triggered by confusion about the legal obligations to disclose serostatus and fear of criminal charges (Dodds et al., 2009; Kaida et al., 2015; Mykhalovskiy et al., 2010; Mykhalovskiy, 2011). However, our findings did not provide evidence in support of a positive association between awareness of the 2012 SCC ruling and sexual inactivity.

Readers should be aware that participants completing the supplemental survey were those who remained under active follow-up in the ACCESS cohort. Furthermore, our primary outcome was self-reported, thus may be subject to recall bias and social desirability reporting bias. Data imputation methods were applied to variables with missing data to preserve statistical power during logistic regression analysis. In sensitivity analysis testing of different imputation methods, our main findings remained consistent.

In conclusion, despite the majority of participants in a community-recruited Canadian cohort of PLWH who use illicit drugs being optimally engaged in HIV treatment and care, we observed poor awareness and understanding of the legal obligations to disclose HIV serostatus to sexual partners. Furthermore, we observed a negative association between ruling awareness and optimal engagement in HIV care (denoted by HIV VL suppression). This analysis identified a critical need for dissemination of clear and accurate information about the current legal obligation to disclose HIV status to sexual partners among marginalized and otherwise criminalized communities, who have previously been underrepresented in this field of research.

As it appears likely that HIV non-disclosure prosecutions will continue in Canada, it is critical that PLWH have access to accurate and comprehensive information about the legal

obligation to disclose in order to make informed sexual choices in the modern TasP era. Given the widespread willingness to receive this information from healthcare providers, further consideration should be given to the role of health and social care providers in discussions about HIV disclosure and the law in clinical settings. Community-driven, evidence-based, best-practice guidelines are warranted to clearly define the ethical and professional principles that guide the work of health and social care providers caring for PLWH in the current legal climate, and to inform information sharing around HIV disclosure and the law. Guidelines should be informed by international position statements (Phillips et al., 2014), and recommendations from community, clinical and non-government organizations (Canadian HIV/Aids Legal Network, 2004; Gagnon, 2013; Loutfy et al., 2014; Positive Women's Network and BC Women's Hospital and Health Centre, 2015), strengthened through collaboration with legal agencies.

Acknowledgments

Sources of funding

This work was supported by the United States National Institutes of Health (R01-DA021525). This research was undertaken, in part, thanks to funding from the Canada Research Chairs program through a Tier 1 Canada Research Chair in Inner City Medicine.

SP is supported by a Study Abroad Studentship from the Leverhulme Trust. AK and GO are supported through funding from the Canada Research Chairs program through a Tier 2 Canada Research Chair in Global Perspectives in HIV and Sexual and Reproductive Health and in Global Control of HPV-Related Disease and Cancer, respectively. RSH has held grant funding from the National Institutes of Health, Canadian Institutes of Health Research National Health Research Development Program, and Health Canada. He has also received funding from GlaxoSmithKline and Merck Frosst Laboratories for participating in continued medical education programs. JM is supported by the British Columbia Ministry of Health and through an Avant-Garde Award (DP1-DA026182) from the National Institute of Drug Abuse (NIDA), at the US National Institutes of Health (NIH). He has also received financial support from the International AIDS Society, United Nations AIDS Program, World Health Organization, National Institutes of Health Research-Office of AIDS Research, National Institute of Allergy & Infectious Diseases, The United States President's Emergency Plan for AIDS Relief (PEPfAR), UNICEF, the University of British Columbia, Simon Fraser University, Providence Health Care and Vancouver Coastal Health Authority. JM's institution has received grants from Bristol-Myers Squibb, Gilead Sciences, Janssen, Merck & Co., ViiV Healthcare and Abbvie. MJM has received funding from the National Institute on Drug Abuse (R01-DA021525), and his institution has received funding from NG Biomed.

The authors thank the study participants for their contribution to the research, as well as current and past researchers and staff. Thanks to Huiru Dong for statistical support during the completion of this analysis.

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APPENDIX 1: Brief summary of the 2012 SCC ruling presented to all participants

"In Canada, people living with HIV could face criminal charges for not telling their sexual partners what their HIV status is, even if they do not intend to transmit HIV, and even if no HIV transmission actually occurs. To date, there are about 155 people* in Canada who have faced criminal charges for not disclosing their HIV status. In 2012, the Canadian legal guidelines for HIV status disclosure became stricter. People living with HIV must now tell a sexual partner their HIV status before having sex where there is a "realistic possibility" of transmitting HIV. This means HIV positive people who do not use condoms or who have a viral load of 1500 copies/mL or more may face a criminal charge of aggravated sexual assault for not telling their sexual partners they have HIV. To clarify, the revised ruling suggests that people living with HIV are legally required to disclose their HIV status to sex partners UNLESS they use a condom AND have a viral load less than 1500 copies/mL."

*current estimates suggest that 181 PLWH have faced charges (Patterson et al., 2016).

HIGHLIGHTS

- 45% of HIV-positive illicit drug users were aware of the 2012 SCC ruling on HIV non-disclosure.
- A minority of participants (18%) had a complete understanding of the ruling.
- Participants achieving HIV viral suppression were less likely to be aware of the ruling.
- Almost all participants would feel comfortable talking to a healthcare provider about HIV disclosure and the law.
- Clarifying healthcare providers' role in advancing education about HIV disclosure and the law is critical.

Table 1

Socio-demographic and clinical characteristics of PLWH who use illicit drugs, stratified by self-reported awareness of 2012 SCC ruling on HIV non-disclosure (n=249)

	All participants, (n=249, 100%)	**Aware of ruling, (n=112, 45%)**	**Not aware of ruling, (n=137, 55%)**	
Variable	**Median [IQR] or n (%)**			**P value**
Age (in years)	50 (44–55)	49 (43–55)	50 (45–55)	0.453
Indigenous ancestry				0.125
Yes	120 (48)	60 (54)	60 (44)	
No	129 (M Cohen et al.)	52 (46)	77 (56)	
Sex				0.778
Female	98 (39)	43 (38)	55 (40)	
Male	151 (61)	69 (62)	82 (60)	
Heterosexual				0.191
Yes	196 (79)	84 (75)	112 (82)	
No	53 (21)	28 (25)	25 (18)	
Homeless				0.641
Yes	20 (8)	8 (7)	12 (9)	
No	229 (92)	104 (93)	125 (91)	
Education ≥ high school				0.595
Yes	111 (45)	52 (46)	59 (43)	
No	138 (55)	60 (54)	78 (57)	
Jacked up by police in L6M				0.777
Yes	13 (M Cohen et al.)	5 (4)	8 (6)	
No	236 (95)	107 (96)	129 (94)	
Incarcerated in L6M				0.757
Yes	10 (4)	5 (4)	5 (4)	
No	239 (96)	107 (96)	132 (96)	
Injection drug use in L6M				0.150
Yes	137 (55)	56 (50)	81 (59)	
No	112 (45)	56 (50)	56 (41)	
Experienced violence in L6M				0.559
Yes	30 (12)	12 (11)	18 (13)	
No	219 (88)	100 (89)	119 (87)	
Sex work in L6M				0.438
Yes	24 (10)	9 (8)	15 (11)	
No	225 (90)	103 (92)	122 (89)	
Sex in L6M				0.091
No sex	143 (57)	56 (50)	87 (64)	
Condom protected sex	57 (23)	29 (26)	28 (20)	

	All participants, (n=249, 100%)	Aware of ruling, (n=112, 45%)	Not aware of ruling, (n=137, 55%)	
Variable	**Median [IQR] or n (%)**			**P value**
Condomless sex	49 (20)	27 (24)	22 (16)	
In a relationship				0.085
Yes	73 (29)	39 (35)	34 (25)	
No	176 (71)	73 (65)	103 (75)	
Years living with HIV	15 (10–20)	15 (9–19)	15 (10–20)	0.169
ART in L6M				1.000
Yes	244 (98)	110 (98)	134 (98)	
No	5 (M Cohen et al.)	2 (M Cohen et al.)	3 (M Cohen et al.)	
Viral load suppression (<50 c/mL)				0.038
Yes	199 (80)	83 (74)	116 (85)	
No	50 (20)	29 (26)	21 (15)	

Percentage totals may exceed 100% due to rounding.

L6M: in the six months before study interview

Table 2

Unadjusted and adjusted odds ratios for correlates of awareness of 2012 SCC ruling among 249 PLWH who use illicit drugs.

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Indigenous ancestry		Not selected
No	1.00	
Yes	1.48 (0.90–2.45)	
Sex		Not selected
Female	1.00	
Male	1.08 (0.65–1.80)	
Heterosexual		Not selected
No	1.00	
Yes	0.67 (0.37–1.22)	
Injection drug use in L6M		
No	1.00	1.00
Yes	0.69 (0.42–1.14)	0.66 (0.39–1.10)
Sex in L6M		
No sex	1.00	1.00
Condom protected sex	1.61 (0.87–3.00)	1.72 (0.91–3.27)
Condomless sex	1.91 (0.99–3.70)	2.00 (1.03–3.92)
In a relationship		Not selected
No	1.00	
Yes	1.62 (0.93–2.80)	
Years living with HIV[+]	0.97 (0.93–1.01)	Not selected
Viral load suppression (<50 copies/ml)		
No	1.00	1.00
Yes	0.52 (0.28–0.97)	0.51 (0.27–0.97)

OR: odds ratio; CI: confidence interval; L6M: in the six months before study interview

[+] per year increase

Table 3

Sources from which participants reporting ruling awareness learned about the 2012 SCC ruling, and healthcare providers they talked to about the case law, stratified by completeness of understanding of the legal obligation to disclose (n=112).

	Participants aware of the ruling (n=112, 100%)	Participants aware of the ruling with complete understanding (n=44, 39%)	Participants aware of the ruling with incomplete understanding (n=68, 61%)	
Variable	**n (%)**			**P value**
Sources from which participants learned about the ruling [+]				
Newspapers/media	52 (46)	19 (43)	33 (49)	0.579
Healthcare provider	30 (27)	16 (36)	14 (21)	0.066
Friends/peers	24 (21)	9 (20)	15 (22)	0.840
AIDS Service Organisation	22 (20)	10 (23)	12 (18)	0.509
Service provider (not ASO)	10 (9)	6 (14)	4 (6)	0.187
Other	3 (3)	2 (M Cohen et al.)	1 (1)	
Type of healthcare provider participants talked to about the ruling [+]				
HIV Physician	22 (20)	14 (32)	8 (12)	0.009
General practitioner	21 (19)	13 (30)	8 (12)	0.019
Nursing staff	12 (11)	7 (16)	5 (7)	0.212
Research staff	11 (10)	5 (11)	6 (9)	0.749
Community worker	9 (8)	6 (14)	3 (4)	0.151
No healthcare providers	57 (51)	15 (34)	42 (62)	0.004
Other [*]	13 (13)	11 (26)	2 (M Cohen et al.)	

[+] Responses are not mutually exclusive, as such column totals may exceed 100%

[*] Responses with a frequency of <5 were categorized as other. Detailed responses categorized in “other” included peer worker, methadone doctor, counsellor, social worker, case manager.

Table 4

Experience and perceived impacts of HIV non-disclosure case law, and satisfaction with disclosure support services among 249 people living with HIV who use illicit drugs, stratified by awareness of ruling.

	All participants (n=249, 100%)	Participants aware of the ruling (n=112, 45%)	Participants not aware of the ruling (n=137, 55%)	
Variable	**n (%)**			**P value**
Existing and preferred HIV disclosure support services				
Satisfied with current HIV disclosure support services				<0.001
Yes	185 (74)	95 (85)	90 (66)	
No	64 (26)	17 (15)	47 (34)	
Healthcare providers participants would be comfortable talking to about HIV non- disclosure case law *				
Regular HIV Physician	140 (56)	51 (46)	89 (65)	0.002
General practitioner	135 (54)	49 (44)	86 (63)	0.003
Methadone doctor	64 (26)	18 (16)	46 (34)	0.002
Non-regular physician	77 (31)	21 (19)	56 (41)	<0.001
Nursing staff	117 (47)	42 (38)	75 (55)	0.007
Research staff	125 (50)	44 (39)	81 (59)	0.002
Counsellor	98 (39)	27 (24)	71 (M Cohen et al.)	<0.001
Social worker	71 (29)	19 (17)	52 (38)	<0.001
Peer worker	77 (31)	25 (22)	52 (38)	0.008
Case manager	70 (28)	24 (21)	46 (34)	0.034
Community worker	73 (29)	25 (22)	48 (35)	0.028
Not comfortable talking to healthcare providers about the law	8 (3)	0 (M Cohen et al.)	8 (6)	0.009
Experience and perceived impacts of HIV non-disclosure case law				
Know someone charged or threatened with a charge for HIV non-disclosure				0.073
Yes	24 (10)	15 (13)	9 (7)	
No	224 (90)	97 (87)	127 (93)	
Unknown	1 (M Cohen et al.)	0	1 (1)	
Believe HIV non-disclosure case law might affect the type of information PLWH are willing to share with providers.				0.254
Yes	139 (56)	66 (59)	73 (53)	
No	69 (28)	27 (24)	42 (31)	
Don’t know	41 (16)	19 (17)	22 (16)	
Believe HIV non-disclosure case law makes PLWH more likely to disclose to new sexual partners				0.020
Yes	138 (55)	72 (64)	66 (48)	
No	105 (42)	39 (35)	66 (48)	

	All participants (n=249, 100%)	**Participants aware of the ruling (n=112, 45%)**	**Participants not aware of the ruling (n=137, 55%)**	
Variable	**n (%)**			**P value**
Don’t know	6 (M Cohen et al.)	1 (1)	5 (4)	
Know someone who has refused sex with a new partner due to fears related to HIV disclosure and the law				0.323
Yes	57 (23)	29 (26)	28 (20)	
No	191 (77)	83 (74)	108 (79)	
Unknown	1 (M Cohen et al.)	0 (M Cohen et al.)	1 (1)	

*Column totals may exceed 100% as more than one response option possible Percentage totals may exceed 100% due to rounding.

Unknown response signifies that participant responses were missing.