The Impact of HIV Non-Disclosure Case Law on the Healthcare Engagement of Women Living with HIV in Canada

by

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Abstract

Introduction: In 2012, the Supreme Court of Canada (SCC) expanded the reach of criminal liability for HIV non-disclosure in Canada when it ruled that people living with HIV (PLWH) who do not disclose their HIV status before sex that has a "realistic possibility" of HIV transmission could face criminal charges, suggesting that condom-protected vaginal sex with a low HIV viral load would incur no legal obligation to disclose. This thesis sought to identify the prevalence and correlates of facing a legal obligation to disclose, and to investigate awareness, understanding and perceived healthcare impacts of the 2012 SCC ruling among the diversity of women living with HIV (WLWH) in Canada, involving WLWH as key research partners.

Methods: Quantitative data from men and women enrolled in a cohort of PLWH who use illicit drugs in Vancouver (ACCESS), and women enrolled in a community-collaborative cohort of WLWH in British Columbia, Ontario, and Quebec (CHIWOS), were used to meet the objectives of this thesis. Novel community-driven questions assessing awareness, understanding and perceived impacts of HIV non-disclosure case law were incorporated into data collection instruments of both cohorts.

Results: Among ACCESS participants who use injection drugs (n=176), WLWH were more likely to face a legal obligation to disclose compared to men in the wake of the 2012 SCC ruling. Among female ACCESS (n=98) and CHIWOS (n=584) participants, awareness of the 2012 SCC ruling (44% and 74%, respectively) and understanding of the conditions under which PLWH may face a legal obligation to disclose (17% and 35%, respectively) were suboptimal. Although most participants were engaged in HIV treatment and care, discussions about HIV disclosure and the law were lacking in healthcare settings, despite participants expressing a willingness and desire to engage in discussions of this nature with providers. Most participants believed that HIV non-disclosure case law might limit the type of information WLWH would share with providers.

Discussion: This thesis identified an urgent need to disseminate information about HIV non-disclosure and the law in community and healthcare settings, to ensure WLWH have fundamental information to avoid prosecution and to optimise their health and rights in the current legal climate.

Keywords: HIV; Women; Criminalization of HIV Non-Disclosure; Canada; Illicit Drug Use; Healthcare Engagement; Antiretroviral Therapy (ART); Law

This thesis is dedicated to Valerie Nicholson, a passionate positive warrior who inspires me to continue this important work.

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Co-authorship Statement

This statement confirms that the PhD candidate conceived, implemented and authored the work presented in this manuscript-based thesis. Specifically, the candidate was responsible for preparing the drafts of the four stand-alone manuscripts included within this thesis prior to circulation to co-authors, who offered critical evaluation of the content of the manuscript prior to journal submission. The candidate revised the content of the manuscripts based on feedback from co-authors, and, where applicable, from external peer reviewers and journal editors following submission for publication. The candidate independently conducted the comprehensive literature review presented in chapter 2, and the statistical analysis presented in chapter 4, with support from a data analyst at the British Columbia Centre for Excellence in HIV/AIDS. For the analyses presented in chapters 3 and 5, the candidate worked closely with statisticians and data analysts from the ACCESS and CHIWOS research teams at the British Columbia Centre for Excellence in HIV/AIDS to complete the data analysis.

Table of Contents

List of Tables

List of Figures

List of Acronyms

ACB	African, Caribbean, Black
ACCESS	AIDS Care Cohort to Evaluate Survival Services
AIC	Akaike Information Criterion
AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral therapy
ASO	AIDS Service Organisation
BC	British Columbia
CHIWOS	Canadian HIV Women's Sexual and Reproductive Health Cohort Study
CBR	Community-based research
GIPA	Greater Involvement of People with AIDS
HIV	Human Immunodeficiency Virus
LGBTTQ	Lesbian, Gay, Bisexual, Transgender, Two-Spirit and Queer
MIWA	Meaningful Involvement of Women living with HIV/AIDS
MSM	Men who have sex with men
OR	Odds Ratio
PLWH	People living with HIV
PRA	Peer Research Associate
SCC	Supreme Court of Canada
TasP	Treatment-as-Prevention
UNAIDS	Joint United Nations Program on HIV/AIDS
VL	HIV RNA plasma Viral Load
WHO	World Health Organization
WLWH	Women living with HIV

"It is a terrible irony that we have come to a place where the medications we fought for will allow us to live a relatively normal quality of life, and now we are going to go to jail for doing so."

Louise Binder, July 2012 (1)

Canadian woman living with HIV and human rights activist.

Chapter 1. Background, Rationale and Objectives

1.1. Realities of Living With HIV in 2016

Since the onset of the HIV pandemic in the 1980s, an estimated 78 million people have acquired HIV globally (2). Over this time the realities of HIV have changed considerably for people living with HIV (PLWH). Empirical evidence now consistently demonstrates the individual (3-9), and population-level benefits (10-17) of expanded access to combination antiretroviral therapy (ART), supporting assertions that PLWH can live long and healthy lives with improved sexual and reproductive options in the fourth decade of the HIV pandemic (18). The significant advances in biomedical treatment approaches to the global fight against HIV/AIDS were apparent at the 20th International AIDS Conference in 2014, when UNAIDS executive director Dr. Michel Sidibé introduced ambitious new targets for HIV treatment and prevention efforts, specifying that by 2020, 90% of PLWH will know their diagnosis, 90% of PLWH will be accessing ART and 90% of people receiving ART will achieve an undetectable HIV RNA plasma viral load (19). UNAIDS asserts that meeting these targets will put us on track to "end AIDS by 2030" (19). This visionary strategy has bolstered efforts to normalize HIV through expanded HIV testing and treatment initiatives in many global settings (20), contributing to escalating viral load surveillance and clinical monitoring of PLWH to meet these targets (21).

While the optimism of the current HIV treatment landscape is undeniable, commentaries have cautioned against the adoption of biomedical interventions in isolation, stressing that biomedical solutions cannot eliminate the pandemic without addressing key social and structural determinants of access to HIV testing, treatment and prevention (22, 23). Establishing effective public health interventions for HIV treatment and prevention is complex, especially given that stigmatized communities

marginalized by social and structural inequalities are disproportionately affected by HIV globally, including women, youth, people who use drugs, people engaged in sex work, and sexual or ethno-racial minorities (2).

While attempts have been made to respond to new realities of living with HIV by reframing HIV as a chronic, manageable condition, HIV-related stigma and discrimination continue to challenge the realization of modern ART benefits, limiting access to healthcare services and compromising human rights (2, 24-27). The damaging effect of HIV-related stigma and discrimination is manifested through the criminalization of HIV non-disclosure, exposure and transmission, where punitive laws are applied severely to PLWH (28).

1.2. The Use of Criminal Law Against People Living With HIV.

1.2.1. The Global Perspective

Since the late 1980s, existing criminal or HIV-specific laws have been used in many international settings to prosecute PLWH believed to have put other people at risk of acquiring HIV (28). Conceived at a time when HIV clinical sequelae were devastating, scientific knowledge was lacking and treatment options were limited, this legal approach represented an attempt to curtail rising HIV incidence (29, 30). However, despite considerable advancements in the science of HIV transmission and evidence-based HIV prevention strategies and treatment over the past 30 years, the use of the criminal law against PLWH continues in many international settings (28, 31). The 2014 UNAIDS Gap report estimates that 49 countries have prosecuted PLWH for HIV non-disclosure, exposure or transmission, with more than 61 countries having established HIV-specific punitive laws (**Figure 1.1**) (2).

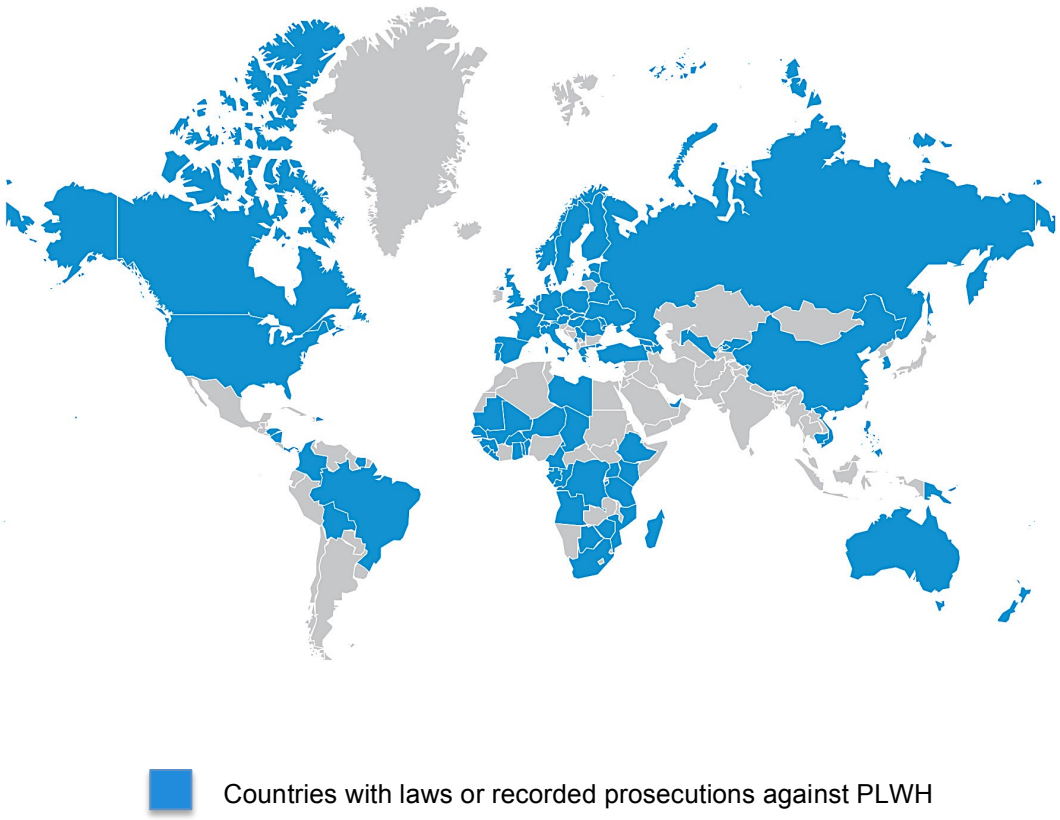


Figure 1-1. Countries with laws or recorded prosecutions for HIV non-disclosure, exposure or transmission[1].

[1] Figure sourced from the UNAIDS Gap report, 2014, which presents data from the report "Advancing HIV justice: A progress report on achievements and challenges in global advocacy against HIV criminalization". Amsterdam / London: Global Network of People Living with HIV / HIV Justice Network, 2013.

The application of criminal law against PLWH has been justified as a method to prevent onward HIV transmission within the wider population (32). Proponents of this punitive approach to HIV prevention argue that the application of criminal laws to cases of HIV non-disclosure, exposure or transmission deters PLWH from engaging in sexual conduct that poses a high risk of HIV transmission, however empirical evidence fails to support that the use of criminal law against PLWH leads to safer sexual practices (32-34). Incapacitation of PLWH who have demonstrated behaviour that risks or results in HIV transmission through incarceration has also been rationalized as a strategy to prevent onward HIV transmission (30). However, the effectiveness of incarceration as a structural method of HIV prevention is disputed, due to the high prevalence of HIV risk behaviours in correctional facilities, combined with limited access to evidence-based harm reduction tools to reduce HIV transmission, which drive an HIV-risk environment for other inmates (35). Furthermore, the negative impact of incarceration on treatment outcomes among PLWH is well documented (36-39), due to suboptimal continuity of care between criminal justice and community health systems, and substandard clinical management within correctional facilities, leading to treatment interruptions, compromised ART adherence, and viral rebound among PLWH who have contact with the criminal justice system (36-38).

A growing body of literature supports that HIV-related criminal laws may in fact compromise public health and human rights, particularly among PLWH those who lack economic or social stability (40-42). In cases where PLWH are prosecuted, legal decision-making is often inconsistent with evidence-based science of HIV transmission risk in the modern ART era (43). Legal frameworks applied in these cases often single out HIV from other infectious diseases, driving HIV exceptionalism (44); the notion that the HIV pandemic necessitates a unique global response beyond what is prescribed for other infectious diseases (45). This legal approach stands counter to efforts to normalize HIV through evidence-based test-and-treat initiatives.

Human rights advocates and international public health bodies maintain that the use of criminal laws against PLWH advances a moralized discourse viewed through the reductive lens of perpetrator and victim rather than evidence-based science, undermining public health messaging of mutual responsibility for safer sex and HIV

prevention, and propagating beliefs that the sexuality of PLWH requires policing (24, 46). HIV criminalization has also been identified as a key driver of HIV-related stigma (47), fuelled by inflammatory media reports of criminal prosecutions against PLWH, which contribute to public misconceptions about the modern reality of living with HIV (48-50). This environment of enhanced HIV-related stigma and discrimination may augment barriers to effective healthcare engagement and propagate social marginalization.

In jurisdictions where the criminal law is used against PLWH, public health experts have argued that the threat of prosecution may undermine healthcare provision by compromising the confidential relationships between healthcare providers and PLWH, driven by fears of exposure of confidential medical information (41, 42, 51, 52). Furthermore, previous work has shown that public health institutions may contribute to an environment of increased legal surveillance of PLWH in settings where HIV criminal laws exist (53, 54). In the context of HIV criminalization, increased HIV-related stigma and discrimination experienced from care providers may also act to drive PLWH away from essential health and social care services, compromising health outcomes (55). The negative healthcare impacts of HIV criminalization are most devastating among marginalized and vulnerable PLWH, who experience additional geographical, financial, social, structural, cultural or gendered barriers to healthcare engagement (2).

Punitive legal approaches to HIV prevention fail to acknowledge the importance of social context in the global HIV epidemic (46). The global population living with HIV is characterized by numerous intersecting vulnerabilities that contribute to social isolation, stigmatization and vulnerability, in terms of race, culture, sexual orientation, and gender (2, 40). The marginalizing identities that increase the risk of HIV acquisition risk similarly increase the risk of HIV criminalization. Indeed, previous work has shown that HIV criminal laws are not applied equally across the population living with HIV, highlighting that some groups, including ethno-racial minorities, experience the brunt of these punitive laws (56, 57). Thus, there is considerable concern that the application of existing or HIV-specific criminal laws against PLWH further isolates and segregates the most marginalized members of society (46, 58, 59).

1.2.2. HIV Criminalization Through a Critical Feminist Lens

Advancing the sexual and reproductive health and rights of WLWH has been recognised as a key priority in the international arena of human rights (60). Women represent 50% of PLWH globally (2). Women experiencing intersecting marginalizing identities and drivers of stigma are overrepresented in the global HIV epidemic, including sex workers, women who use illicit drugs, and survivors of violence (2). Previous work has shown that an HIV-positive diagnosis further heightens experiences of stigma, mental health challenges and gender-based violence, and exacerbates barriers to sexual and reproductive health and rights (61-63).

The subordinate socioeconomic status of many women, driven by gendered power imbalances and gender-based violence, coupled with the biological vulnerability to HIV acquisition, increases susceptibility to HIV infection among women (64). As such, a primary motivating factor in the use of criminal law against PLWH was its perceived role to protect vulnerable women at risk of acquiring HIV through sexual violence or dependent partnerships, and to advance sexual autonomy (29, 30). However, human rights advocates have condemned the use of criminal law against WLWH, declaring it a threat to women's rights and sexual-reproductive autonomy (29, 65, 66). This position is supported by evidence from a global survey on the sexual reproductive health and rights of WLWH, indicating that punitive HIV criminal laws compromise effective healthcare delivery and create structural barriers to sexual reproductive health and human rights of women, propagating stigma, discrimination and violence (67).

Women may be uniquely affected by living in an environment where HIV non-disclosure, exposure or transmission is criminalized. As women are often the first to learn of their HIV status through antenatal HIV testing strategies, they may be blamed for introducing HIV into a relationship (24). Further, women encounter gendered barriers to and challenges of negotiating condom use and safe HIV disclosure in intimate serodiscordant partnerships, driven by gender-based violence, power inequities, and sexual and cultural norms (68-72). The healthcare engagement of WLWH may also be distinctively shaped by living under the threat of prosecutions for HIV non-disclosure, exposure or transmission. Women have specific healthcare requirements (including sexual, reproductive and maternal health needs) that necessitate a holistic, women-

centred healthcare approach (73). During pregnancy and motherhood, women may face increased social, clinical and legal surveillance in environments where the criminal law is used against PLWH (74-76), and may even risk facing criminal charges for mother-to-child transmission in some global settings (77). WLWH experience gendered barriers to healthcare engagement, including HIV-related stigma, social and financial inequities, and concerns relating to HIV serostatus disclosure (78, 79), which may be augmented by living under the threat of HIV criminal laws. This concern is most acute among marginalized women at risk of poor treatment outcomes, including sex workers, women who use injection drugs and ethno-racial minorities (80-82).

1.2.3. The Criminalization of HIV Non-Disclosure in Canada

The majority of global prosecutions against PLWH have occurred in North America (**Figure 1.2**) (28). Canada is notable as being one of the first countries globally to use the criminal law against PLWH in 1989 (29), as well as being the first country to convict a person living with HIV of murder in the case of R v. Aziga in 2008 (83). Current estimates suggest that there are 75,500 PLWH in Canada (84). With at least 181 PLWH having been charged for HIV non-disclosure since the 1980s (41), the ratio of non-disclosure charges nationally stands around 2/1,000 people currently living with HIV. Most (90%) cases of HIV non-disclosure in Canada have involved male defendants, with heterosexual men representing the majority of cases (85). Reports from the Canadian HIV/AIDS Legal Network suggest that there were 30 HIV non-disclosure cases among 28 men who have sex with men (MSM) between 1989 and 2014, with 25 of these cases occurring since 2006, suggesting a possible increase in the rate of HIV non-disclosure cases among MSM in recent years (85). Analyses of HIV non-disclosure cases in Canada have shown that HIV non-disclosure case law may be discriminatorily applied to certain ethnic minorities. Specifically, African, Caribbean or Black (ACB) men are strongly represented among heterosexual men who have faced criminal charges for HIV non-disclosure in Canada (50, 57, 85-87). Between 2004 and 2010, 52% of the heterosexual men prosecuted for HIV non-disclosure in Ontario were ACB ethnicity (57).

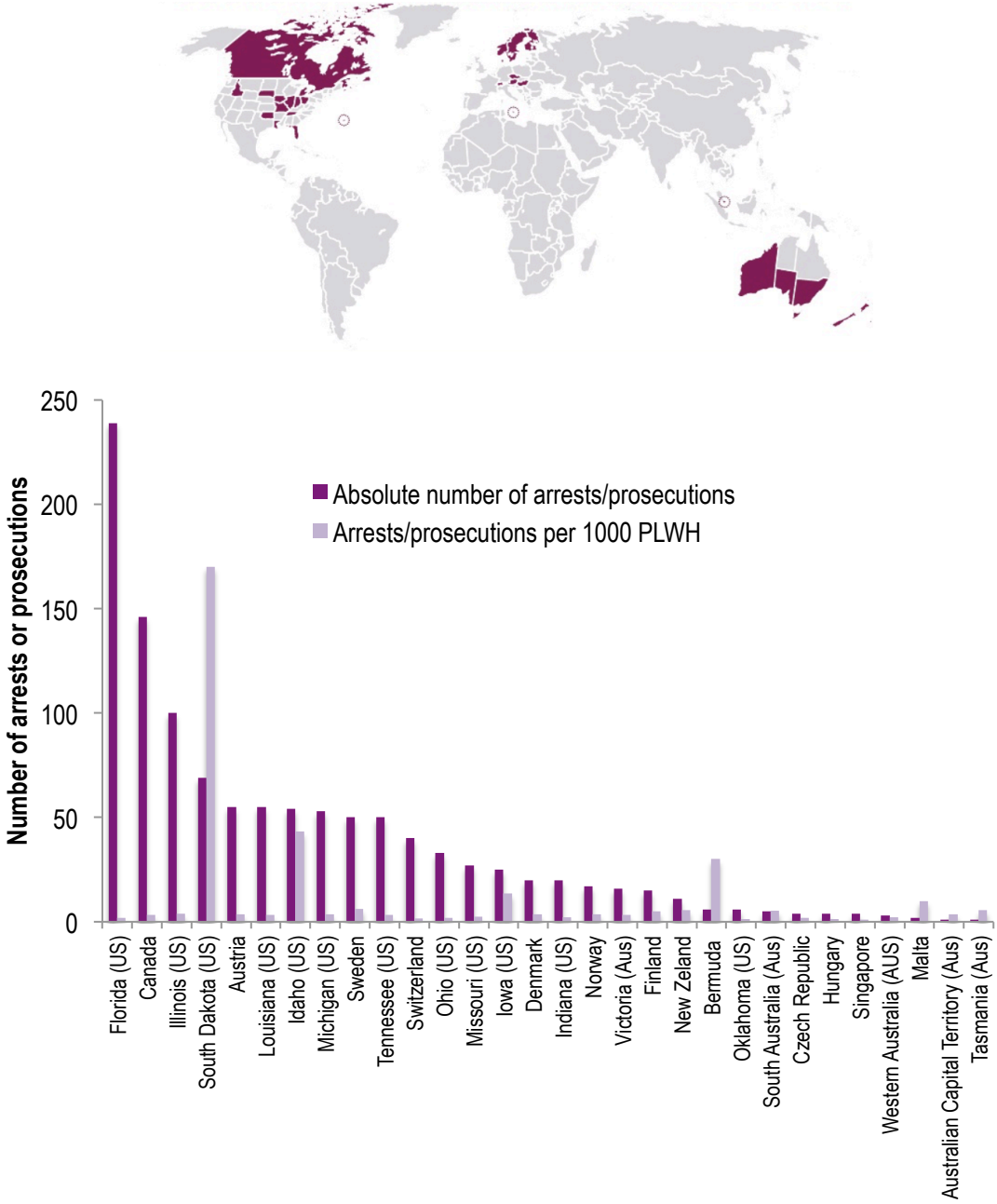


Figure 1-2. Top 30 jurisdictions with the highest number of known arrests/prosecutions for HIV non-disclosure, exposure or transmission per 1000 PLWH[2].

[2] Data correct as of July 2012. Figure sourced and adapted from the report "Advancing HIV justice: A progress report on achievements and challenges in global advocacy against HIV criminalization". Amsterdam / London: Global Network of People Living with HIV / HIV Justice Network, 2013, with the permission of author, Edwin Bernard.

The Canadian HIV/AIDS Legal Network tracks charges and prosecutions against PLWH in Canada, based on media coverage, published rulings, and communications with community members and lawyers, to provide the most comprehensive monitoring of HIV non-disclosure cases nationally (85). The Canadian HIV/AIDS Legal Network typically reports the number of HIV non-disclosure cases, acknowledging that a single criminal case may feature more than one associated charge (57). Comprehensive tracking information from the Canadian HIV/AIDS Legal Network extended up to February 2015 at the time of writing (88). At that time, 188 separate HIV non-disclosure cases were identified among 176 PLWH, 9 of whom had been involved in more than one criminal case of HIV non-disclosure (88). Among 130 prosecutions where there were known resolutions in court, 99 (76%) resulted in a conviction or guilty plea (88). Of the 99 cases resulting in a conviction or guilty plea, 75 cases had sufficient information to determine whether HIV transmission was alleged or proven. Among these 75 cases, 37 (49%) involved alleged or proven HIV transmission (88). It must be acknowledged that these figures are estimates, due to the incomplete records available in many cases.

As Canada lacks HIV-specific laws in the Criminal Code, existing criminal laws are applied to cases of HIV non-disclosure, informed by legal precedents set by the Supreme Court of Canada (SCC) (89-92). While SCC rulings are national in scope, lower courts within different provinces may interpret and apply these legal tests differently (93). There is notable variation in the number of HIV non-disclosure cases across different Canadian provinces (50, 57). An analysis of 104 criminal cases of HIV non-disclosure that occurred in Canada between 1989-2009 revealed that Ontario (n=49, 47%), Quebec (n=15, 14%) and British Columbia (n=12, 11%) accounted for the largest proportion of HIV non-disclosure cases of all Canadian provinces and territories (50). Based on data from 2013, these provinces also boast the largest proportion of reported HIV diagnoses nationally (Ontario 40%; Quebec 22%; and BC 13%) (84). More recently, a 2014 report from the Canadian HIV/AIDS Legal Network similarly observed that the province of Ontario accounts for the majority of HIV non-disclosure cases nationally (85).

In most Canadian HIV non-disclosure cases, sexual assault law has been applied based on the legal interpretation that HIV non-disclosure by a sexual partner represents

fraud, and vitiates consent that was given to a sexual encounter by the HIV-negative partner (85). This logic is based on the assumption that a complainant would not have agreed to the sexual encounter had they been informed of the positive HIV status of their sexual partner. The charge most frequently applied is aggravated sexual assault, which is defined in the Criminal Code of Canada as a sexual assault that "wounds, maims, disfigures or endangers the life of the complainant" (94). This represents one of the most serious charges in the Criminal Code, and a conviction can result in a maximum sentence of life imprisonment and registration as a sex offender. In these criminal cases, the defendant's HIV-positive status is considered as a weapon of harm (95). Exposure to a realistic possibility of HIV transmission is deemed sufficient to endanger life, and charges are brought regardless of whether or not HIV transmission occurred or intent to transmit HIV was established. The estimated prevalence of conviction for charges related to HIV non-disclosure in Canada (76%) is notably higher than for traditional sexual assault cases. Data from 2004 estimated that 10% of all sexual assaults reported to the police in Canada resulted in a conviction (96). This highlights the exceptional legal framework within which HIV non-disclosure is criminalized in Canada.

Since the 1990s, there has been an escalation in the extent and severity of the use of the criminal law against PLWH in Canada (31). Almost 70% of the cases brought between 1989 and 2010 occurred since 2004 (50, 57). Between January 2011 and January 2014, an estimated 30 PLWH were charged with HIV non-disclosure in Canada, suggesting a continuation of the high rates of non-disclosure charges (85). In October 2012, the SCC released a landmark ruling on two major HIV non-disclosure cases, R v. Mabior and R v. D.C, setting a new legal precedent for the use of criminal law against PLWH in Canada (89, 90). The SCC ruled that PLWH could face a conviction for aggravated sexual assault if they failed to disclose their HIV status before sex that posed a "realistic possibility" of significant bodily harm, i.e., HIV transmission. The SCC suggested that condom-protected vaginal sex in the presence of a "low" HIV RNA plasma viral load (defined by the SCC as <1500 copies/mL) would pose no realistic possibility of HIV transmission, and thus would require no legal obligation to disclose. However, in releasing this judgment, the SCC failed to comment on the relevance of this legal test for episodes of anal sex or oral sex.

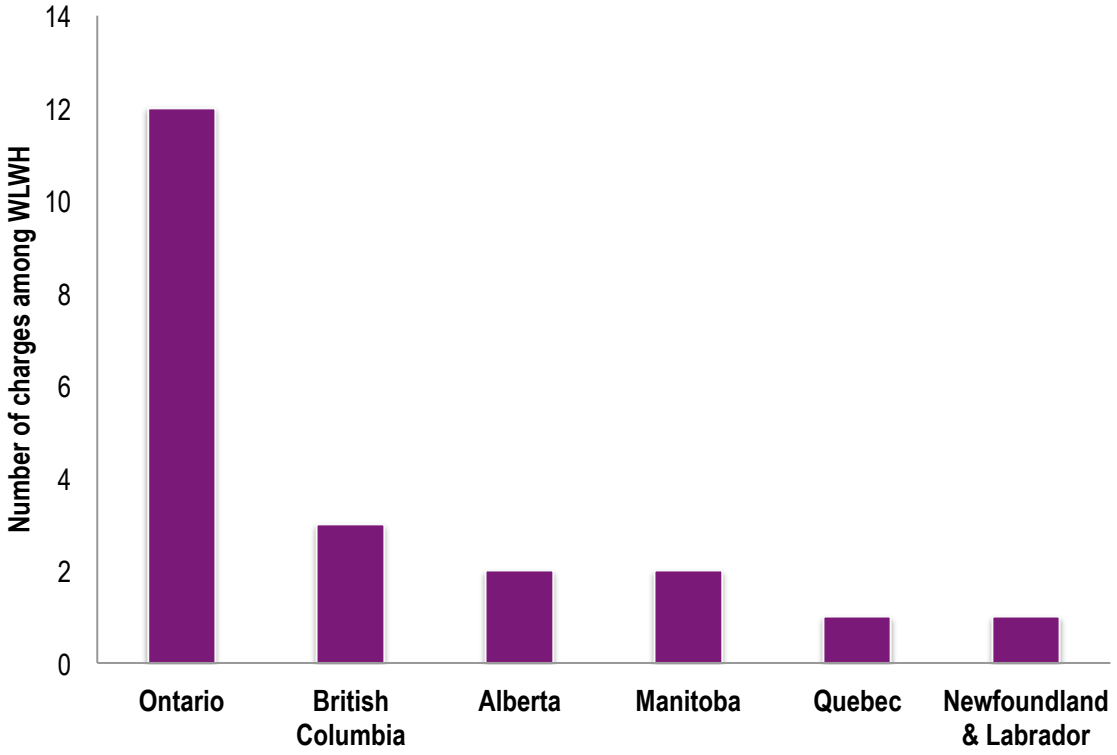
With its 2012 ruling, the SCC increased the reach of criminal liability for HIV non-disclosure past what was previously established when the SCC released its ruling in R v. Cuerrier in 1998 (97). In R v. Cuerrier, the SCC determined that PLWH who fail to disclose to partners before sex that represents a "significant risk" of HIV transmission could face criminal charges (92). Although the court failed to provide a clear interpretation of the circumstances that would constitute a "significant risk" of HIV transmission, in the wake of this ruling several courts deemed that condom use alone would avert the legal duty to disclose (93). The release of the 2012 SCC ruling dashed hopes of a reframed legal test based on clear scientific evidence of the negligible risk of HIV transmission associated with consistent use of ART generated in the years following the Cuerrier ruling (10, 14, 98). Rather than incorporating modern scientific evidence of HIV transmission risk in its 2012 ruling, the SCC increased the scope of the legal test by suggesting that both condom use and a low viral load by a PLWH would be required to avert the legal obligation to proactively disclose to sexual partners (90). In the wake of this ruling, legal scholars cautioned that this revised legal test may have a disproportionate impact on the most vulnerable and marginalized PLWH, who experience barriers to disclosure, condom use or access to treatment, mediated by intersecting axes of social location, including sexual orientation, gender, ethnicity, and age (97, 99).

1.2.4. Women and the Criminalization of HIV Non-Disclosure

The Public Health Agency of Canada estimates that there were 16,880 WLWH in Canada at the end of 2014 (84). Marginalized and vulnerable women are disproportionately represented among Canadian WLWH, including Indigenous women, survivors of violence, women who use illicit drugs, LGBTQ women and immigrant women, with notable variation in the socio-demographic characteristics of WLWH from coast to coast (100, 101). To date, women have represented the complainants more often than the accused in HIV non-disclosure cases in the Canadian criminal justice system, echoing gendered patterns of sexual assault complainants in the Canadian criminal justice system (102). Specifically, in an analysis of police-reported violent crime in 2008, the victims of all forms of sexual assault in Canada were ten times more likely to be female (102). Women may be more likely to identify as a victim in cases of HIV non-

disclosure, or to engage with the criminal justice system with charges of this nature, due to the fact that HIV non-disclosure charges are considered in the framework of sexual assault (57, 103). Commentaries also suggest that the gendered patterns observed in HIV non-disclosure cases may be driven by inflammatory and sensationalised media reports, which propagate narratives of deceptive men living with HIV failing to disclose their HIV status to innocent female partners (104-106).

The first documented case of a woman living with HIV being charged with aggravated sexual assault in Canada was in 1991 in British Columbia, which triggered considerable outcry and advocacy efforts from the local HIV community (107). Based on tracking of criminal cases by the Canadian HIV/AIDS Legal Network, an estimated 21 criminal cases of HIV non-disclosure have been faced by 17 WLWH in Canada during the years since, with 2 women featuring as the defendant in criminal cases on more than one occasion (108). Overall, 8 (38%) of the total 21 HIV non-disclosure cases among WLWH have occurred since 2011, with the majority (57%) occurring in Ontario (**Figure 1.3**). Among the 21 HIV non-disclosure cases, information on whether alleged or proven HIV transmission occurred is available in 16 cases, among which HIV transmission to complainants is alleged or proven to have occurred in 5 cases (31%) (108). Of 17 cases where the outcome of the charge was known, there were 12 (71%) convictions or guilty pleas, which is similar to the estimated prevalence of convictions for HIV non-disclosure charges among both men and women in Canada (76%) (57). At least one woman has been convicted on two separate occasions, and another woman who was initially convicted was later acquitted after appeal (89). Among cases where there was a conviction, and for which information on HIV transmission to the complainant is available (n=11), alleged or proven HIV transmission to the complainant occurred in five cases (45%) (108).



Province of HIV non-disclosure criminal case	Estimated absolute number of HIV non-disclosure cases, 1989-2016	Number of HIV diagnoses among women, 1985-2014 (84)	Estimated HIV non-disclosure criminal cases per 1000 WLWH
Ontario	12	5495	2.18
British Columbia	3	2194	1.37
Alberta	2	1443	1.39
Manitoba	2	615	3.25
Quebec	1	3514	0.28
Newfoundland & Labrador	1	59[3]	16.9

Figure 1-3. HIV non-disclosure cases among Canadian WLWH, by province

[3] This number is likely underestimated. Prior to 2011, HIV cases diagnosed outside of Newfoundland and Labrador were not included in surveillance data for this province presented in HIV prevalence and incidence reports from the Public Health Agency of Canada, which likely results in inflation of the rate of criminal cases per 1000 WLWH for this province.

Feminist legal scholars have argued that intersecting identities, in relation to HIV status, stigma and power imbalance, that are at play in cases of HIV non-disclosure among WLWH can result in marginalized and disempowered women being charged with sexual assault, representing a radical departure from historical application of these laws (109). Women experiencing intersecting vulnerabilities and social marginalization are strongly represented among the women who have faced charges for HIV non-disclosure in Canada (89, 110-112). Of the 17 women who have featured in defendants in HIV non-disclosure criminal cases, at least five were Indigenous and two were immigrant women, representing ethno-racial minorities who experience significant barriers to HIV disclosure, and access to health services (75, 87, 101, 113, 114). Women who experience socio-economic insecurity also feature strongly among defendants in criminal cases to date, including at least three single mothers, four women with a history of sex work and four women with a history of substance use (112). Clear layers of inequality, marginalization and disempowerment that emerge among female defendants also exacerbate challenges of safe HIV disclosure and negotiation of safer sex practices with sexual partners, resulting in a profile of sexual assault defendants that is markedly distinct from that found in non-HIV related sexual assault cases (109). Notably, at least five women who have faced charges for HIV non-disclosure were survivors of sexual or physical violence, a key symptom of gender inequality and disempowerment. (99). At least one of the women charged had herself been a complainant in a HIV non-disclosure case against a former partner (108), emphasizing the complex and evolving experiences of this legal environment, where accusers may transition to becoming the accused later in their life journey.

The identities and social challenges of WLWH who have faced charges for HIV non-disclosure strongly undermines the position that this punitive legal approach represents a tool to protect women and promote their sexual autonomy. In R v. DC, an initial charge of domestic violence raised by a woman living with HIV against her abusive male partner was overturned after a more sensationalized accusation of HIV non-disclosure was made against the complainant by her abusive partner (89). This accusation related to one alleged (and contested) episode condomless sex without HIV serostatus disclosure at the inception of a four year-long mutually disclosed relationship, during which no HIV transmission occurred (89). Similarly, in 2001 a 28 year old

Indigenous woman pleaded guilty to common nuisance after failing to disclose her HIV status to a man who was alleged to have molested her since the age of 13 (112). This tragically echoes reports of instances where survivors of sexual assault living in Canada were reminded of their legal obligation to disclose to their assailant (99), and raises concerns that the use of criminal law against WLWH may represent another tool that abusive partners can use to exert control against vulnerable WLWH (75).

A conviction in cases of HIV non-disclosure leaves a crippling legacy for WLWH. In Canada, women convicted of aggravated sexual assault are placed on the national sexual offenders registry, which may compromise future employment opportunities and create challenges when engaging with child protection authorities. Women who have faced charges for HIV non-disclosure may be victim to relentless and discriminating media coverage (115-117), and in some cases detailed police warnings (118-120), with no respect for privacy, even in cases where the accused is a minor (121, 122), or is subsequently acquitted of all charges (123). This inflammatory media coverage has led to forced HIV status disclosure, and contributes to public misconceptions about HIV, fuelling discrimination and stigma against the wider Canadian population living with HIV (49, 124, 125). Equally, for women presenting as witnesses in HIV non-disclosure trials, experiences of engaging with a hostile criminal justice system and being subject to the associated media coverage can be particularly distressing (126). Activists have condemned use of criminal law against WLWH, and the manner in which these cases are handled by the courts and portrayed within the media (1, 107, 124, 127, 128).

The impacts of the criminalization of HIV non-disclosure may extend beyond the women who face criminal charges in Canada. Fear of HIV non-disclosure prosecutions may shape the healthcare engagement and experiences of WLWH, and augment gender inequities in health outcomes due to concerns around the limits of confidentiality in the healthcare system, and increased HIV-related stigma from healthcare providers and the public (111, 129). Previous work has shown that Canadian women experience poorer quality of initial HIV care (8), delayed engagement into care (9,10), increased likelihood of unstructured treatment interruptions (11), and poorer adherence to ART (12,13), treatment outcomes (14-17) and life expectancy (18) compared to men living with HIV.

However, the extent to which HIV non-disclosure case law may further shape the healthcare engagement of WLWH across Canada remains uncharacterised.

Importantly, WLWH may be disproportionately or at least differently affected by the altered margins of criminal responsibility for HIV non-disclosure in the wake of the 2012 SCC ruling, driven by gendered barriers to safe HIV serostatus disclosure (75, 130, 131), condom use negotiation (132, 133), and gendered disparities in treatment outcomes (8, 82, 134-138). However, the perceived impact of the 2012 SCC ruling on healthcare engagement and experiences remains unexplored in the Canadian setting. Furthermore, the voices of WLWH, particularly those who are most marginalized and vulnerable, remain largely absent from this conversation.

1.3. Key Knowledge Gaps and Study Justification

In the context of increasing global efforts to scale-up testing and treatment initiatives in order to eliminate the HIV/AIDS pandemic, identifying social and structural barriers to healthcare engagement of PLWH is an urgent priority. A growing body of research suggests that the use of criminal law against PLWH represents a key barrier to healthcare engagement (41, 42, 52). Previous commentaries suggest that the criminalization of HIV non-disclosure may impact the healthcare engagement of women and men differently (30, 111, 129), however, there is a paucity of research focused on WLWH in the Canadian context. Given evidence of gendered barriers to safe HIV status disclosure (130, 131, 139), negotiation of condom use (132, 133) and gender-based differences in HIV treatment outcomes observed in a Canadian setting (8, 82, 134-138), combined with escalating tension between laws criminalizing HIV non-disclosure and public health policies designed to promote optimal health outcomes for WLWH (21, 41, 43), evaluating the awareness of HIV non-disclosure case law and its impact on the healthcare engagement of Canadian WLWH is an urgent public health priority.

In releasing its ruling on two major HIV non-disclosure cases in 2012, the SCC increased the reach of criminal liability for HIV non-disclosure in Canada, suggesting that both condom use and a low viral load by a PLWH were required to remove the legal obligation to disclose prior to episodes of vaginal sex. It is expected that marginalized

and vulnerable PLWH, who face social and structural barriers to effective healthcare engagement, ART adherence and viral load suppression, are likely to be disproportionately impacted by this ruling (99). Given evidence of gendered barriers to safe HIV status disclosure (130, 131, 139), negotiation of condom use (132, 133) and gender-based differences in treatment outcomes observed in a Canadian setting (8, 82, 134-138), it is also likely that WLWH will be at increased risk of prosecution in the wake of this ruling, however this has not been empirically evaluated.

Despite the extraordinary consequences that the criminalization of HIV non-disclosure may have for the health and lives of WLWH (111), and the enhanced social and public health surveillance that it may introduce (76, 140), women's awareness and understanding of the legal obligation to disclose remain uncharacterised in the wake of the 2012 SCC ruling. There is an urgent need to determine whether Canadian WLWH have access to fundamental information to protect themselves from prosecution in the current legal climate. Furthermore, there is a need to determine existing and preferred sources of support for women around HIV disclosure and the law, to inform community-driven strategies to advance knowledge sharing and mitigate harmful impacts of living under the threat of criminalization for HIV non-disclosure.

Among the diversity of WLWH in Canada, the risk of being charged with HIV non-disclosure is not equally distributed. Rather, marginalized and vulnerable women are over-represented among those who have faced charges (112). Thus, assessments of awareness, understanding, and perceived healthcare impacts of HIV non-disclosure case law must be framed from a critical feminist framework, which acknowledges women's multiple and intersecting identities (i.e., ethno-racial group, sexual orientation, gender) (141, 142) that influence the risks and consequences of HIV non-disclosure prosecutions. Capturing the experiences and perspectives of women who are marginalized and otherwise criminalized, who have historically had limited resources to advocate for change and protection from the harmful impacts of the law (29), is of considerable importance. Given the provincial variation in the socio-demographic characteristics of WLWH in Canada (100), and regional differences in the number of criminal cases of HIV non-disclosure (57), a national assessment of women's awareness and perceived healthcare impacts of HIV non-disclosure case law is justified.

Finally, the threat of HIV non-disclosure prosecutions may itself pose a barrier to conducting rigorous and ethically sensitive research on awareness and impacts of HIV non-disclosure case law. Specifically, concerns relating to the limits of confidentiality in the healthcare setting in the current legal context (143-146) may similarly compromise trust in the research setting. Safely undertaking this research requires prioritization and guarantee of trust and confidentiality between researchers and participants. Community-collaborative research approaches, which prioritize involvement and leadership of WLWH in the identification of research questions and protocols, are critical to ensure participants feel safe and empowered to share their experiences, and to accurately represent community concerns and priorities. Community-based research promotes peer leadership in the research process (147), and plays a key role in empowering the HIV community to speak out around how the threat of HIV non-disclosure prosecutions impacts health and lives.

Conducting community-collaborative research on a national scale to fill key knowledge gaps pertaining to the impact of criminalization of HIV non-disclosure on the health and rights of WLWH represents an important contribution to both national and global dialogues. Addressing these critical knowledge gaps will inform future public health initiatives to educate and support Canadian WLWH in the current legal environment, with the ultimate aim of optimising engagement in the cascade of HIV care and improving health and rights. This work will represent a vital contribution to the increasing evidence of the negative public health effects of HIV non-disclosure prosecutions, and will bolster the case against the criminalization of HIV non-disclosure within Canada and internationally.

1.4. Study Objectives

This thesis seeks to investigate the impact of HIV non-disclosure case law on the healthcare engagement of WLWH in Canada.

Four research objectives were identified under the umbrella of the primary research question:

1. **To comprehensively review the literature to investigate the impact of criminalization of HIV non-disclosure on the healthcare engagement of WLWH in Canada.** In fulfilling this objective, the candidate sought to review evidence of the impact of the criminalization of HIV non-disclosure on WLWH across the cascade of HIV care, in order to situate this research within the Canadian literature and identify priority research areas within this field.

2. **To estimate the prevalence and correlates of facing a legal obligation to disclose HIV status to sexual partners based on the 2012 SCC ruling on HIV non-disclosure among PLWH who have used injection drugs in a Canadian setting.** In fulfilling this objective, the candidate sought to identify PLWH who were most at risk of prosecution in the wake of the 2012 SCC ruling among a group of marginalized and otherwise criminalized PLWH. Due to sex-based differences in HIV treatment outcomes and condom use negotiation, it was hypothesized that female participants would be more likely to face a legal obligation to disclose, and thus be at increased risk of prosecution in the current legal climate.

3. **To assess the awareness, understanding and perceived impacts of HIV non-disclosure case law among PLWH who have used illicit drugs in a Canadian setting.** In fulfilling this objective, the candidate sought to assess awareness of the 2012 SCC ruling, to investigate the existing and preferred roles of healthcare providers in discussions around HIV disclosure and the law, and to evaluate the perceived impact of HIV non-disclosure case law on healthcare engagement among a group of marginalized and otherwise criminalized PLWH. Additionally, the candidate sought to evaluate sex-based differences in case law awareness and perceived healthcare impacts of HIV non-disclosure criminalization. It was hypothesised that PLWH who were marginalized from HIV treatment services would be less likely to report awareness of the legal obligation to disclose, and that a majority of participants would report perceived harmful impacts of HIV non-disclosure case law on healthcare engagement.

4. **To assess the awareness, understanding and perceived healthcare impacts of HIV non-disclosure case law among WLWH across three Canadian provinces.** In fulfilling this objective, the candidate sought to assess awareness of the 2012 SCC ruling, to investigate the existing and preferred roles of healthcare providers in discussions around HIV disclosure and the law, and to evaluate the perceived impact of HIV non-disclosure case law on healthcare engagement across the diverse and intersecting identities of Canadian WLWH. It was hypothesised that women marginalized from health and community services would demonstrate poor awareness of HIV non-disclosure case law, and that a majority of women would report perceived harmful impacts of HIV non-disclosure case law on healthcare engagement.

1.5. Theoretical Frameworks

This research was guided by critical feminist and social justice frameworks, grounded in a commitment to the Meaningful Involvement of Women Living with HIV (148).

1.5.1. Critical Feminist Framework

Research that considers the key intersections between HIV and gender, socio-economic status, race and sexual orientation has been identified as a priority for future scholarship in the field of HIV criminalization (41). This thesis applies a critical feminist framework throughout, which considers gender as the dominant focus of the analysis (141), fully acknowledging the unique experiences, concerns and aspirations of women in the research. Acknowledging that women's identities and experiences are diverse, this framework draws from intersectional feminist theory, asserting that multiple social identities (including gender, ethnicity and socio-economic status) intersect at individual and structural levels to create the social inequalities and oppression experienced by women (142, 149, 150). By adopting the critical feminist framework, this research takes into account the complexities of women's lives, contextualizing individual, social and structural barriers to awareness and understanding of HIV non-disclosure case law, and

to healthcare engagement in the climate of criminalization of HIV non-disclosure. This framework has not previously been applied within empirical work that investigates the awareness and healthcare impacts of the criminalization of HIV non-disclosure. Given that marginalized and vulnerable women who experience intersecting axes of inequality and stigma are overrepresented among women who have faced charges in Canada to date (112), this framework is highly relevant for this research question.

1.5.2. Social Justice Framework

This research also incorporates a social justice framework, which challenges systems of oppression and supports equal access to resources, services and opportunities within a community (151). Social justice theory recognises that particular social groups may be denied equal distribution of responsibilities within a community, and deprived of the right to participate as equal members of society (152). The relevance of social justice theory for this research is unquestionable. In the current legal context, the acceptance of PLWH as equal members of society is undermined by the application of a HIV-specific legal framework, which seeks to police the sexual conduct of PLWH, and place the burden of responsibility for HIV prevention entirely on the population living with HIV (152).

A social justice framework acknowledges the importance of considering social, political, legal and cultural context in order to fully conceptualize health and social inequalities and advocate for rights within marginalized communities (151, 153). In line with this principle, this research sought to capture the experiences of women who are most oppressed, marginalized and stigmatized, and disproportionately impacted by living under the threat of HIV non-disclosure prosecutions. By applying a social justice framework rooted in critical feminism, this research recognised the diverse experiences and identities of WLWH, which shape social inequities and health disparities in the current legal climate (152).

Through applying a social justice framework, this research sought to generate community-driven evidence to highlight the need for meaningful change to improve the health and rights of WLWH in the current legal context, particularly those with limited resources to advocate for change or to protect themselves from negative impacts of the

law (154). This research ultimately advocates for the need to reconsider approaches to the ongoing HIV pandemic rooted in the criminal justice system, endorsing the application of a social justice lens to HIV treatment and prevention initiatives to fully realise individual and community-level benefits of HIV treatment and care, and optimise the health and rights of WLWH.

1.5.3. Meaningful Involvement of Women Living with HIV/AIDS

Social justice frameworks support meaningful collaboration with WLWH in the research process, to advance community engagement, empowerment and social change (155, 156). This proposal abided by principles to support the Greater Involvement of People with AIDS (GIPA), and the Meaningful Involvement of Women living with HIV/AIDS (MIWA) by incorporating community members in all stages of the research process (157). Specifically, one woman living with HIV was recruited as a Peer Research Associate (PRA) to work in partnership with the candidate throughout the research process. Valerie Nicholson is an Indigenous woman living with HIV, and a passionate advocate for the health and rights of marginalized WLWH across Canada. She is an experienced PRA and currently holds the position of Board Chair of Positive Living British Columbia. Valerie worked closely with the candidate to offer a community and lived experience perspective on the research questions, data collection instruments, study protocol, and data interpretation. She was a valued co-author of the manuscripts presented in this thesis, and played a key role in identifying and driving knowledge translation and exchange opportunities.

This research was conducted under the umbrella of the Canadian HIV Women's Sexual and Reproductive Health Study (CHIWOS), an ongoing community-collaborative longitudinal cohort study that includes WLWH as core partners of the research process, and has an ongoing commitment to MIWA and GIPA principles (158). A diverse national team of 38 WLWH were hired, trained and supported as PRAs with CHIWOS (147). Efforts were made to hire WLWH traditionally underrepresented in research and to ensure the diversity of WLWH across Canada was represented (147). CHIWOS also incorporates input from three provincial Community Advisory Boards; active groups of community stakeholders in women and HIV, representing more than 80 organizations

nationally. Discussions with the CHIWOS participants, PRAs and Community Advisory Board identified a critical need to raise awareness about the challenges of living and navigating healthcare engagement under the threat of HIV non-disclosure prosecutions, which was the primary motivation for this research. The research presented in this thesis benefitted from the CHIWOS community infrastructure, facilitating collaboration with a national network of PRAs and regional Community Advisory Boards to support community-perspectives and lived experience on all aspects of the research. Importantly, community input from the peer network was sought on the language, content and wording of the research questions to ensure priorities and concerns of WLWH were captured within the research, and that the safety and respect of WLWH was prioritised.

1.6. Data Sources

This study used a quantitative methodological design, drawing on existing and novel survey data from two ongoing longitudinal prospective Canadian HIV cohort studies.

1.6.1. ACCESS

The AIDS Care Cohort to evaluate Exposure to Survival Services (ACCESS - described in detail in **Chapter 3**) is an ongoing longitudinal HIV cohort study based in Vancouver, British Columbia, which enrols PLWH who have ever used illicit drugs. The ACCESS study's semi-annual follow-up and confidential linkage to comprehensive HIV clinical data through the Drug Treatment Program at the BC Centre for Excellence in HIV/AIDS facilitates evaluation of the interrelationships of behavioural, environmental and social-structural exposures on access and adherence to ART and HIV disease progression among more than 900 PLWH who use illicit drugs. ACCESS participants experience high levels of illicit drug use, homelessness, exposure to the criminal justice system, and illicit income generation, including sex work.

By utilizing the ACCESS data set, the candidate was able to conduct aspects of the original research within a marginalized community that faces the challenge of living in a highly criminalized environment. Longitudinal, semi-annual follow-up of ACCESS

participants facilitated the incorporation of novel questions into the data collection instrument to assess the awareness and perceived healthcare impacts of HIV non-disclosure case law. With data captured for both male and female participants of the ACCESS cohort, sex-based comparisons were possible for the two study objectives that utilised this data source (presented in **Chapters 3** and **4**).

1.6.2. CHIWOS

The Canadian HIV Women's Sexual and Reproductive Health Study (CHIWOS - described in detail in **Chapter 5**) is the largest community-collaborative cohort of WLWH across Canada, having enrolled 1425 WLWH from across British Columbia, Ontario and Quebec. The CHIWOS cohort includes key representation of marginalized and vulnerable populations who are disproportionately affected by HIV in Canada or underserved by health services, including sex workers, trans-women, immigrant women, Indigenous women, women who use illicit drugs, and ethno-racial populations. The three study provinces comprise the majority (81%) of prevalent female cases in Canada (100).

By utilising the CHIWOS dataset, the candidate was able to access data on reproductive, sexual, mental and women's health outcomes in addition to use of HIV services across the diverse and intersecting identities of WLWH in Canada, and to conduct provincial comparisons within the data. The ongoing, longitudinal study design of CHIWOS facilitated incorporation of novel questions into the data collection tool to assess the awareness and perceived healthcare impacts of HIV non-disclosure case law among WLWH. Through working with the CHIWOS team, the candidate was positioned to collaborate with a national network of peer researchers and community partners.

1.7. Overview of Thesis

This is a manuscript-based thesis including six chapters, which collectively address the priority research questions and research objectives previously identified. Chapters two to five represent stand-alone manuscripts, thus there is some degree of repetition regarding the background of the criminalization of HIV non-disclosure in Canada in order to effectively introduce the topic within each paper.

Chapter one provides a background of the use of criminal law against PLWH globally and in Canada, and discusses the potential impact of the use of HIV criminal law on the health and lives of WLWH. This chapter also discusses the importance of applying a critical feminist, social justice lens when considering the impact of the criminalization of HIV non-disclosure on women's health and rights, and outlines the primary research question and objectives of this thesis.

Chapter two was published in the *Journal of the International AIDS Society* in December 2015 (159) and presents a comprehensive review of the Canadian literature to investigate the impact of the criminalization of HIV non-disclosure on the healthcare engagement of Canadian WLWH. This review considers the impact of the criminalization of HIV non-disclosure across key stages of the cascade of HIV care (160), including HIV testing, access to and engagement in HIV care, and adherence to ART and achievement of HIV RNA plasma viral suppression. The findings and research priorities that emerged from this literature review informed original data collection efforts, the development of research objectives and novel quantitative data collection presented in chapters four and five of this thesis.

Chapter three of this thesis is currently in press at *CMAJ Open (161)*. This analysis uses cross-sectional ACCESS data to investigate the prevalence and correlates of facing a legal obligation to disclose HIV serostatus to sexual partners among PLWH who have used injection drugs, based on the interpretation of the legal test for HIV non-disclosure prosecutions presented in the 2012 SCC ruling. Participant sex is considered as a key covariate within this analysis. This paper identifies the proportion and characteristics of marginalized and otherwise criminalized PLWH who may be at risk of prosecution in the wake of the 2012 SCC ruling.

Chapter four of this thesis has been submitted for peer-reviewed journal publication. This paper uses cross-sectional ACCESS data to investigate the awareness of 2012 SCC ruling on HIV non-disclosure, the understanding of the current legal obligation to disclose, and the perceived impacts of HIV non-disclosure case law among PLWH who have used illicit drugs. Prevalence and correlates of awareness of the 2012 SCC ruling are determined, and existing and preferred sources of information around

HIV disclosure and the law are identified. The perceived impact of HIV non-disclosure case law on healthcare engagement, sexual conduct and disclosure practices of PLWH are assessed among a marginalized and otherwise criminalized group of PLWH, with participant sex considered as a key covariate. A subanalysis assessing prevalence and correlates of awareness of the 2012 SCC ruling among female ACCESS participants only is also presented in this chapter.

Chapter five of this thesis is being prepared for peer-reviewed journal publication. This paper uses cross-sectional CHIWOS data to investigate the awareness of 2012 SCC ruling on HIV non-disclosure, the understanding of the current legal obligation to disclose, and the perceived healthcare impacts of HIV non-disclosure case law among WLWH in BC, Ontario and Quebec. The prevalence and correlates of awareness of the 2012 SCC ruling are determined, and existing and preferred roles of healthcare providers in discussions around HIV disclosure and the law are identified. Finally, the perceived impact of HIV non-disclosure case law on healthcare engagement is assessed.

Chapter six presents a discussion of the findings of the original research presented within this thesis, and identifies recommendations and priority areas for future scholarship in this field.

Chapter 2. The Impact of Criminalization of HIV Non-Disclosure on the Healthcare Engagement of Women Living with HIV in Canada: A Comprehensive Review of the Evidence.

2.1. Abstract

Background: In 2012, the Supreme Court of Canada ruled that people living with HIV (PLWH) must disclose their HIV status to sexual partners prior to sexual activity that poses a "realistic possibility" of HIV transmission for consent to sex to be valid. The Supreme Court deemed that the duty to disclose could be averted if a person living with HIV both uses a condom *and* has a low plasma HIV RNA viral load during vaginal sex. This is one of the strictest legal standards criminalizing HIV non-disclosure worldwide and has resulted in a high rate of prosecutions of PLWH in Canada. Public health advocates argue that the overly broad use of the criminal law against PLWH undermines efforts to engage individuals in healthcare and complicates gendered barriers to linkage and retention in care experienced by women living with HIV (WLWH).

Methods: We conducted a comprehensive review of peer-reviewed and non-peer-reviewed evidence published between 1998 and 2015 evaluating the impact of the criminalization of HIV non-disclosure on healthcare engagement of WLWH in Canada across key stages of the cascade of HIV care, specifically: HIV testing and diagnosis, linkage and retention in care, and adherence to antiretroviral therapy. Where available, evidence pertaining specifically to women was examined. Where these data were lacking, evidence relating to all PLWH in Canada or other international jurisdictions was included.

Results: Evidence suggests that criminalization of HIV non-disclosure may create barriers to engagement and retention within the cascade of HIV care for PLWH in Canada, discouraging access to HIV testing for some people due to fears of legal implications following a positive diagnosis, and compromising linkage and retention in healthcare through concerns of exposure of confidential medical information. There is a lack of published empirical evidence focused specifically on women, which is a concern given the growing population of WLWH in Canada, among whom marginalized and vulnerable women are overrepresented.

Conclusion: The threat of HIV non-disclosure prosecution combined with a heightened perception of surveillance may alter the environment within which women engage with healthcare services. Fully exploring the extent to which HIV criminalization represents a barrier to the healthcare engagement of WLWH is a public health priority.

2.2. Introduction

In many settings worldwide, there is a reliance on criminal prosecutions of HIV transmission, exposure, and non-disclosure in efforts to reduce HIV incidence (2, 28). Human rights advocates and public health scientists have condemned these prosecutions, maintaining that the use of the criminal law against people living with HIV (PLWH) jeopardizes public health efforts to meet their health needs (30, 41, 42, 51, 52, 143, 162-164) and further complicates gendered barriers to linkage and retention in HIV care (30, 66, 99, 111, 126, 165-167). We reviewed the evidence to determine how the threat of HIV non-disclosure prosecution affects healthcare engagement of women living with HIV (WLWH) in Canada, one of the countries that most aggressively uses the criminal law against PLWH (28).

2.2.1. Canadian legal precedent for HIV non-disclosure prosecutions

Since the late 1980s, PLWH in Canada have faced the risk of criminal charges if they did not disclose their HIV status before a sexual encounter. In 1998, the matter came before the Supreme Court of Canada (SCC) in R. v. Cuerrier ("Cuerrier"), in which the SCC found that there was a duty to disclose when sexual activity presented a "significant risk" of transmitting HIV (**Figure 2-1**) (92). In this case, an HIV-positive man in British Columbia was charged with aggravated assault after allegedly failing to disclose his HIV status before condomless sexual intercourse with two women. Since Cuerrier, criminal charges have been brought on the basis of HIV non-disclosure, regardless of whether or not HIV transmission occurred, or whether intent to transmit was established. The SCC's ruling in Cuerrier left many scenarios to be determined with respect to the "significant risk" threshold. For example, the relevance of condom use to reduce the risk of HIV transmission was not settled in Cuerrier, and application and interpretation of the law varied across jurisdictions and cases in the following years. However, in at least four criminal cases after Cuerrier, it was judged that "significant risk" of HIV transmission (and legal duty to disclose) was averted if a condom was used (93, 168).

In October 2012, the SCC set a new and more rigorous test for Canadian HIV non-disclosure prosecutions in its rulings in R v. Mabior and R v. DC (89, 90). The SCC

ruled that PLWH who do not disclose their HIV status before sexual activity that poses a "realistic possibility" of HIV transmission can face criminal charges for aggravated sexual assault (**Figure 2.1**). Additionally, the SCC deemed that in circumstances where condom-protected penile-vaginal intercourse occurred in the presence of a "low viral load" (<1500 copies/mL plasma), the realistic possibility of HIV transmission would be negated, and criminal liability for HIV non-disclosure would be avoided (89, 90). However, the court left it unclear whether this reasoning would apply to other sexual acts besides penile-vaginal sex. The SCC found that HIV non-disclosure prior to sex that posed a realistic possibility of HIV transmission constituted fraud that vitiated the consent to sexual activity. A conviction can result in a maximum sentence of life imprisonment and mandatory listing on the National Sex Offender Registry.

The Cuerrier Test (1998)

A person living with HIV can face criminal charges for failing to disclose his/her HIV status prior to engaging in a sexual encounter that represents a "significant risk" of HIV transmission.

The Mabior Test (2012)

A person living with HIV can face criminal charges for failing to disclose his/her HIV status prior to engaging in a sexual encounter that represents a "realistic possibility" of HIV transmission.

Figure 2-1. Summary of the historical and current case law for HIV non-disclosure, reflecting two key rulings by the Supreme Court of Canada.

Canada has one of the strictest legal thresholds for criminal prosecutions of PLWH globally, and has produced the second highest absolute number of convictions among individuals charged with HIV non-disclosure, after the United States (28). The Canadian legal approach is contrary to international recommendations, including guidance from UNAIDS, the Global Commission on HIV and the Law, and the International Advisory Panel on HIV Care Continuum Optimization (IAPAC) (169-172). Moreover, the legal interpretation of HIV transmission risk fails to reflect current scientific evidence (43, 173). The probability of HIV transmission from a WLWH who is not on antiretroviral therapy (ART) to a seronegative male partner is estimated at 0.04% per act of condomless penile-vaginal intercourse, with the transmission risk significantly elevated in early and late stages of HIV infection (174). Condoms reduce the probability of HIV transmission during penile-vaginal intercourse by an estimated 80% (175). The use of ART by PLWH further reduces the risk of HIV transmission to sexual partners. The Swiss Federal AIDS Commission released a landmark statement in 2008, which stated that PLWH who are adherent to ART for six months, with an undetectable viral load (<40 copies/mL) and no concurrent sexually transmitted infections, could not transmit HIV through sexual contact (176). The negligible possibility of HIV transmission per act of condomless penile-vaginal intercourse associated with ART adherence has been further supported by contemporary cohort studies and expert commentaries from respected researchers and clinicians (10, 12-14, 43, 177).

Between 1989 and October 2015, an estimated 181 individuals were charged for HIV non-disclosure in Canada (178). The use of the criminal law against PLWH has increased since the late 1980s (50, 57, 93), with notable increases in the annual number of charges following the release of key rulings from the SCC (57). Most charges have been brought against heterosexual men, with African/Black men disproportionately represented (57, 85, 87). Women account for a quarter of incident HIV cases in Canada annually (84), while representing approximately 10% of individuals charged for HIV non-disclosure (168). Notably, however, marginalized women are overrepresented among the 17 women who have been charged, including sex workers, women living with addiction, survivors of abuse and Indigenous women (111, 112, 168). The fact that women have more frequently represented the complainants in HIV non-disclosure cases to date may reflect the fact that the Canadian criminal justice system treats HIV non-

disclosure as a sexual offence, triggering preconceptions about expected gender identities of complainant and defendant (57, 168), further fuelled by inflammatory media reports of criminal cases with male defendants (48, 49, 104).

2.2.2. Historical considerations

There is a critical need to consider the criminalization of HIV non-disclosure through a gendered lens. Across a diversity of global settings, women experience gender-based inequities, including relationship power imbalance, intimate partner violence and a subordinate legal status, which increase HIV acquisition risks (64). In the late 1980s, laws criminalizing HIV non-disclosure, transmission and exposure were viewed and pursued as a means of protecting women from HIV acquisition (179). However, in the years since, women's advocates have argued that HIV criminalization is a blunt tool, and an ineffective method of HIV prevention among women (111).

In recent Canadian history, progressive sexual assault laws were achieved, along with an affirmative, robust definition of consent, following a hard-fought campaign for women's equality, dignity and sexual autonomy (95, 180). These laws were intended to empower women's autonomous sexual decision-making, including advancing consensual and safer sexual practices (180). The fact that sexual assault laws are being used in Canada to prosecute cases of HIV non-disclosure among women they originally sought to protect is contrary to the spirit of this women's rights movement (95, 111, 168). Far from promoting an individual's responsibility and right to protect themself, scholars and community advocates emphasize that HIV criminalization endorses messaging that safe sex and HIV prevention is the exclusive (and legal) responsibility of PLWH (111, 179) and contributes to the portrayal of PLWH as "reckless vectors" and their sexual partners as innocent victims, driving social anxieties and misconceptions around HIV, and failing to advance gender equality (46).

2.2.3. Women and the criminalization of HIV non-disclosure

There are an estimated 16,880 WLWH in Canada (84), with overrepresentation from members of marginalized sub-populations, including Indigenous women, women who

use illicit drugs, sex workers, immigrant and refugee women, and LGBTQ women (100, 181). WLWH may be differently affected by environments shaped through the criminalization of HIV non-disclosure as compared to men. Many women receive routine HIV testing through antenatal health services, and are thus more likely to be aware of their positive HIV status (111, 129). Although gender differences in disclosure rates are inconsistently observed across international studies, the literature is consistent regarding women's unique barriers to and consequences of HIV disclosure (71) Women may delay disclosure to sexual partners due to fears of stigma, discrimination, social isolation and rejection (70, 71, 139, 182). In particular, women who face power inequality within dependent partnerships may risk violence or abandonment associated with disclosing their status, insisting on condom use, or refusing sexual advances (70, 109, 114, 183, 184), and may be less likely to satisfy the Canadian legal test for HIV non-disclosure in the wake of the 2012 SCC ruling (97, 185).

A concern is that the threat of HIV non-disclosure criminalization may jeopardize public health initiatives focused on addressing the health needs of WLWH (30, 41, 42, 51, 52, 143, 162-164). Evidence suggests that WLWH in Canada experience delayed access to HIV care (135, 138), poorer initial quality of HIV care (186), increased risk of treatment interruptions (187) and poorer treatment outcomes, in terms of ART adherence (188, 189), viral suppression (82, 134, 136, 137) and viral rebound (137, 190), compared to men. The overly broad use of the criminal law against PLWH in Canada combined with inflammatory media reporting of criminal cases (120, 191) contributes to a surveillance environment that fosters uncertainty, fear and vulnerability among PLWH (192-195). Consequently, the criminalization of HIV non-disclosure in Canada may represent an additional barrier to the healthcare engagement of WLWH (111, 129).

2.3. Aim of review

Current best practice in HIV care is to meaningfully engage PLWH in HIV care services to optimise individual and public health benefits of ART. Increasingly, this is conceptualized within the cascade of HIV care (160) (**Figure 2-2**). The cascade outlines incremental stages of engagement with HIV treatment and care required to achieve viral

suppression, and is used to monitor the success of HIV care initiatives (82, 196). The strategy known as Treatment-as-Prevention (TasP) aims to promote high levels of viral suppression through ART use and retention in the cascade of HIV care, to both curb HIV-related morbidity and mortality and reduce onward HIV transmission (16, 20, 197). However, a crucial challenge for the success of TasP campaigns is addressing social and structural level barriers to optimal engagement in the cascade (198). We sought to determine the effect of the criminalization of HIV non-disclosure on healthcare engagement of Canadian WLWH across the cascade of HIV care.

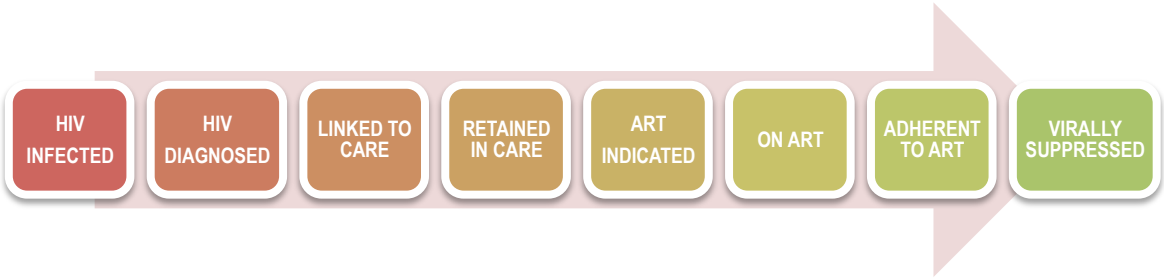


Figure 2-2. Gardner's Cascade of HIV Care, illustrating key steps in the cascade of HIV care, from primary HIV infection to viral suppression.

2.4. Methods

We performed a comprehensive review of peer-reviewed and non-peer-reviewed literature to evaluate the impact of HIV non-disclosure criminalization on the engagement of Canadian WLWH across key stages of the cascade of HIV care, specifically; HIV testing and diagnosis, linkage and retention in care, and ART access and adherence. Our search was limited to literature written in the English language and published between December 1998 and September 2015. Where available, literature pertaining specifically to Canadian WLWH was examined. Where lacking, literature relating to other Canadian populations living with HIV was reviewed. Inclusion of literature was limited to Canadian studies due to the specificity of Canadian HIV non-disclosure case law and healthcare delivery systems. Literature from international jurisdictions was included only when Canadian literature was lacking.

We commenced the literature search in Pubmed, using the search terms: HIV law; HIV criminalization; HIV non-disclosure; HIV law women; HIV law Canada; HIV law public health; HIV law testing; HIV law antiretroviral therapy; HIV law healthcare engagement; HIV law adherence. Duplicate searches were completed using Google Scholar and Simon Fraser University's online library to identify missed publications. We reviewed the reference lists of retrieved articles to identify articles missed by our search strategy. We reviewed titles of abstracts presented at the International AIDS Conference (AIDS), the International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention and the Canadian Association for HIV/AIDS Research conference to identify presentations relevant to the aims of this review. Abstracts of potentially relevant articles were read to confirm suitability for inclusion in the review, before a detailed review was completed. Identified literature was categorized into three key topics: HIV diagnosis and testing; linkage and retention in HIV care; and access and adherence to ART. To contextualize our research findings, we reviewed relevant clinical guidelines and literature published by HIV organizations, including the Canadian HIV/AIDS Legal Network.

2.5. Results and Discussion

We identified 20 articles based on 16 Canadian studies that presented data on the impact of HIV criminalization on healthcare engagement of PLWH, two of which were limited to WLWH. Canadian studies evaluating the impact of HIV criminalization on access and adherence to ART were lacking. This required expanding our search to other settings, which identified an additional three articles based on two studies (**Table 2.1**).

2.5.1. HIV Diagnosis and Testing

HIV testing is the first stage of engagement within the cascade of HIV care, when people with HIV are diagnosed and subsequently linked with health services (160). In Canada, an estimated 21% of PLWH are unaware of their HIV serostatus (84). Increasing HIV testing among individuals who suspect that they may be HIV-positive but do not wish to know their status (199, 200) and those truly unaware of their status is a rate limiting step

in the cascade of HIV care, compromising the ability to identify and link to care those most at risk of onward HIV transmission (201).

Several Canadian studies have evaluated the perceived impact of HIV non-disclosure criminalization on HIV testing. In qualitative interviews and focus groups with WLWH (202), healthcare providers (203) and stakeholders working with PLWH (204), participants expressed the opinion that the criminalization of HIV non-disclosure negatively affects willingness to test for HIV. However, these qualitative data did not capture perspectives of people who may be personally deterred from accessing HIV testing in the current legal climate (202-204). In a qualitative study among 27 gay, bisexual and other men who have sex with men (MSM), HIV-negative participants believed that fear of non-disclosure prosecutions reduced willingness to access HIV testing in the community (145). Similarly, in two national cross-sectional surveys conducted in 2011 among 2,139 Canadians (52% female) and 1,235 MSM (67% HIV-negative), 31% and 48% of participants believed that non-disclosure prosecutions reduced willingness to access HIV testing, respectively (199, 205). However, in these analyses participants did not report on whether their own testing practices were affected by non-disclosure prosecutions.

Studies presenting data on personal HIV testing practices suggest that fear of non-disclosure prosecutions impacts HIV testing for some Canadians (144, 206). In a clinic-based survey among 150 HIV-negative MSM in Toronto, few (7%) participants reported that fears of prosecution made them less likely to access HIV testing (206). However, in a survey of 721 gay, bisexual and MSM (85% HIV-negative) in Ottawa, 21% of participants reported that the risk of HIV non-disclosure prosecutions negatively affected their decision to access HIV testing (144). Notably, among HIV-negative and unknown status participants, those reporting that non-disclosure prosecutions affected their testing practices were less likely to have previously received an STI/HIV test and more likely to report a preference for anonymous HIV testing (144, 146), representing a key target group for HIV testing initiatives. Anonymous testing has the highest HIV-positivity rate of all testing services in Ontario (207), which may suggest that these participants suspect that they are HIV-positive, but willingness to test through standard testing is negatively affected by fear of prosecution. In contrast, in qualitative interviews

among PLWH in Ontario, participants reported that non-disclosure prosecutions did not influence their HIV testing practices prior to their diagnosis (193); however most participants were tested before the incidence of Canadian criminal prosecutions increased (from 2004 onwards) (57).

To our knowledge, only one analysis has used Canadian population-based HIV testing rates to assess an association between HIV testing and the criminalization of HIV non-disclosure. This assessment of regional HIV testing rates among MSM in Ottawa revealed no significant decrease in testing rates after media coverage of a local, high-profile non-disclosure prosecution in 2010 (145). However, HIV testing decisions may have been influenced by a variety of competing factors, including health status of the individual, which may diminish the ability to detect an impact of non-disclosure prosecutions on testing practices (145).

The expansion of HIV testing to identify the undiagnosed population living with HIV and reach ambitious 90-90-90 UNAIDS treatment targets (19) is a national public health priority (138). The literature reviewed here offers some evidence that HIV criminalization may introduce an additional structural-level barrier to HIV testing for some individuals, possibly those who anticipate a positive result. Even if a minority of individuals are deterred from HIV testing, this may compromise the ability to meet the UNAIDS target that 90% of PLWH should know their HIV status by 2020 (19). Establishing a clear evidence-based association between HIV testing and the criminalization of HIV non-disclosure presents significant challenges due divergent individual, social, and structural factors that interplay to influence HIV testing decisions.

Our review revealed a dearth of studies specifically evaluating the impact of the criminalization of HIV non-disclosure on HIV testing among Canadian women. As a result of routine antenatal HIV testing, the majority of WLWH in Canada are tested for HIV during pregnancy. In Ontario, the province with the largest number of WLWH in Canada, 96% of pregnant women were tested for HIV antenatally in 2010, with 18 HIV-positive diagnoses made (0.13 per 1000) (208). Opt-out antenatal HIV testing protocols are operational in the majority of Canadian provinces and territories (209), with the important aim of increasing uptake of HIV testing, and ensuring early ART initiation to

prevent mother-to-child transmission (210). However, HIV testing circumstances may influence decisions to disclose and engage with health services. Women accessing HIV testing in traditional risk-based, client-initiated voluntary counselling and testing settings make a considered, risk-based decision to present for HIV testing, often after discussion with their partner (70). However, women who are offered routine HIV testing in an antenatal clinic appointment may not have previously considered accessing testing, and may face additional barriers to accepting their positive diagnosis (211), engaging with treatment services or disclosing to partners (70).

Canadian antenatal HIV testing guidelines from 2006 recommend that testing during pregnancy should be voluntary, with women reserving the right to refuse testing after receiving comprehensive counselling (212). The 2012 Canadian HIV pregnancy planning guidelines state that women testing positive should be further counselled about the legal implications of HIV non-disclosure (213). However, routine opt-out testing protocols may compromise the counselling and consent process (214); limiting pre-test counselling to convey the potential legal implications of a positive result, and removing the opportunity to refuse testing or request anonymous testing (215-218). In qualitative interviews exploring experiences of opt-out antenatal HIV testing among 12 pregnant women in Newfoundland and Labrador, no participants were advised they had the right to refuse HIV testing, and some participants were tested for HIV without providing formal consent or being aware that they were being tested (219). This qualitative study raised concerns that an opt-out approach to testing may threaten provider trust, and impact future health seeking behaviour (219). Similarly, in a survey administered to 299 postpartum women in Toronto, 74% of participants reported receiving pre-test counselling before antenatal HIV testing, and 70% of these participants were given the option to refuse the test (220). These findings are a concern, given the climate of criminalization of HIV non-disclosure, when failure to provide comprehensive pre-test counselling and acquire informed consent may not only pose a threat to civil liberties, autonomy and privacy of information (218), but may also limit awareness of the legal obligation to disclose.

2.5.2. Linkage and Retention in HIV Care

After receiving an HIV diagnosis, PLWH should be linked and retained in appropriate HIV care services to ensure optimal health outcomes. Medical confidentiality is vital to encourage patient candidness during clinical consultations and preserve public confidence in the medical system (221). In Canada, medical confidentiality is legally protected, however healthcare providers may be obliged to expose confidential health information if called as a witness in a judicial trial or issued with a warrant to produce healthcare records (222). Similarly, there is precedent for healthcare providers to voluntarily breach confidentiality for reasons of public safety; for example if they become aware of an immediate risk of serious harm to an identifiable third party (222). With the 2012 SCC ruling on HIV non-disclosure, the relevance of clinical case notes to confirm viral load testimony in court has been confirmed (89, 90), and police and prosecutors have attempted to force disclosure of confidential health documents for use as evidence within judicial trials (93, 223).

Canadian studies suggest that non-disclosure prosecutions can prompt individuals to question the limits of confidentiality in healthcare settings, resulting in reluctance to engage in open dialogues during clinical consultations, and representing a barrier to linkage and retention in HIV care services. In self-administered anonymous surveys among 721 MSM (85% HIV-negative) in Ottawa in 2012, 15% of the participants reported that non-disclosure prosecutions made them afraid to discuss health concerns with healthcare providers (144). Participants reporting this fear were more likely to self-report condomless intercourse and multiple sexual partners; individuals most in need of sexual health services (144, 146).

Qualitative interviews among PLWH have also explored the impact of HIV non-disclosure criminalization on healthcare engagement and experience. In semi-structured interviews with 27 HIV-positive and negative MSM in Ottawa in 2012, participants expressed concerns relating to the transfer of health information between the local police and public health departments, resulting in mistrust of healthcare providers (145). These findings were echoed in semi-structured interviews with African/Black men and women living with HIV in the Greater Toronto Area, during which participants reported experiencing increased stigma and discrimination from healthcare providers due to the

criminalization of HIV non-disclosure, and questioned the privacy of healthcare information (55). Conversely, in-depth interviews with 122 PLWH in Ontario revealed that participants with longstanding relationships with healthcare providers did not report difficulty trusting their provider in the current legal climate; suggesting that the impact of HIV non-disclosure criminalization on healthcare engagement may depend on the length and quality of relationships with healthcare providers (193). Notably, participants were recruited from clinic settings and as such were already engaged with healthcare services, thus may not represent the most marginalized members of the community.

Canadian healthcare providers have similarly voiced concerns that the criminalization of HIV non-disclosure compromises provider-patient relationships (50, 143). Semi-structured interviews with 25 people who work with PLWH in Ontario (including lawyers, physicians and counsellors) revealed that fear of non-disclosure prosecutions deterred patients from speaking freely with providers about sexual behaviours and disclosure challenges due to anxieties relating to confidentiality of medical documentation (50). These concerns were reiterated in focus group discussions with 47 service providers, working in nursing, medicine, law, social work in 2011 (224). Similarly, qualitative interviews with 40 PLWH and 15 prevention workers in Toronto identified fear of HIV non-disclosure prosecutions as a deterrent to participating in risk-reduction programs that involved the discussion of sexual history (225). In semi-structured interviews with 15 HIV/AIDS service providers in Toronto, participants expressed that the SCC's ruling in R v. Mabior increased stigma directed towards PLWH (particularly women, sex workers and those battling addiction), which may further compromise healthcare engagement among these marginalized groups (226).

The climate of HIV criminalization may also influence the clinical practice of healthcare providers, which may in turn compromise the quality of care provided. In semi-structured interviews in Ontario, healthcare providers reported being increasingly mindful of the law when counselling patients in a clinical setting (50, 143). Similarly, qualitative interviews and focus groups among healthcare workers in the HIV sector have suggested that providers lack understanding about the legal obligation to disclose (55, 226), which compromises their ability to provide sound counselling to patients (50, 143). In focus group discussions with 47 service providers in Ottawa, participants

expressed concern that disclosure counselling was being approached from a legal rather than healthcare standpoint (224). Similarly, interviews with 30 public health nurses in Ontario revealed that the risk of subpoena of medical documentation for use in judicial trials influenced patient-provider discussions around the limits of confidentiality in the healthcare setting, with some providers withholding or limiting details about confidentiality to preserve therapeutic relationships (227). Qualitative data from the latter two studies also suggested that anticipation of possible subpoena of medical documents for use in judicial trials may influence documentary practices within medical records, either to ensure adequate recall of clinical events, to signify professional standards are being upheld, or to maximize patient confidentiality (224, 227, 228).

Our review of the Canadian literature suggests that the criminalization of HIV non-disclosure may negatively affect healthcare engagement and experiences of PLWH. However, not all individuals report these harmful effects. Previous work suggests that many PLWH are not personally concerned about being prosecuted for HIV non-disclosure (199), particularly individuals who can and do consistently disclose their HIV status, those who are sexually inactive, or those who are in mutually disclosed long-term partnerships (41, 194). Opinions and experiences of the criminalization of HIV non-disclosure are diverse and complex (126, 194, 229). For PLWH, perceptions of HIV non-disclosure criminalization may evolve from the time of initial diagnosis, with some individuals transitioning from the role of “accuser” to “accused” during their life journey (126). However, the gendered impacts of the criminalization of HIV non-disclosure on healthcare engagement and experience in Canada have not yet been thoroughly explored.

As the majority (63%) of WLWH in Canada are diagnosed with HIV during childbearing years (230); most WLWH require reproductive health services as part of their care. In the 2012 Canadian HIV Pregnancy Planning guidelines, the authors express concern that HIV-related prosecutions may affect engagement with reproductive health services, including contraceptive counselling and antenatal programs designed to reduce perinatal transmission and promote maternal health outcomes (213). There is a dearth of Canadian studies evaluating the impact of the criminalization of HIV non-disclosure on engagement with reproductive services. However, qualitative interviews

conducted in Ontario with 77 pregnant WLWH in their third trimester, and at three and twelve months postpartum, revealed that women experienced increased surveillance and judgment from health and social care providers during pregnancy and early motherhood in the current legal climate (140). Prosecution of mother-to-child transmission is rare in Canada; however, in 2006 an Ontario mother living with HIV was found guilty of failing to provide the necessities of life to her second child, who acquired HIV after the mother elected not to disclose her HIV status to the medical staff providing her care during childbirth, meaning postpartum antiretrovirals could not be administered to her baby immediately after delivery (231).

The apparent erosion of patient-provider relationships and the negative impact on disclosure counselling in the climate of criminalization are a concern, given that many PLWH demonstrate a critical need for counselling regarding their current legal obligation to disclose. Focus group discussions among marginalized HIV-positive and negative female sex workers in Vancouver in 2008 revealed a lack of understanding of the legal obligation to disclose (131). Poor understanding of the legal obligation to disclose similarly emerged in focus group discussions among 60 WLWH in Vancouver (202), qualitative interviews and focus groups with immigrant WLWH in Ontario (229), and qualitative interviews with African/Black men and WLWH in Toronto (55). In contrast, 91% of HIV-positive participants enrolled in two Ontario-based cohort studies (n=930), were aware that Canadian law required HIV disclosure in certain circumstances (193). A highly-educated sample of MSM (over 80% with tertiary education) interviewed in Ottawa in 2012 also demonstrated good (90%) awareness of HIV non-disclosure laws (144). However, the latter studies are unlikely to be generalizable to the most marginalized PLWH, who are already suboptimally engaged in HIV care. Limited gender-based comparisons of awareness of the legal obligation to disclose among PLWH are available, however in a national survey among 2,139 Canadians in 2011, a lower proportion of women reported being aware that PLWH can be prosecuted for HIV non-disclosure (83% vs. 90%, p value <0.05) (232). It is important to acknowledge that awareness and understanding of the legal obligation to disclose remains poorly characterised in the wake of the 2012 SCC ruling.

2.5.3. Access and Adherence to ART

For PLWH, optimal adherence to ART is the key determinant of viral suppression (233). Thus, elements of HIV non-disclosure criminalization that affect access and adherence to ART may limit achievement of viral suppression, resulting in both individual and public health repercussions. Little empirical evidence exists to evaluate the effect of non-disclosure prosecutions on access and adherence to ART in Canada. However, preliminary findings from the National HIV Criminalization Survey, an online survey administered to 2,076 PLWH (13% women) in the United States in 2012, revealed that 42% of participants believed it was reasonable to avoid seeking HIV treatment due to concerns relating to the risk of HIV-related prosecutions (234). No significant differences by gender were identified.

Cross-sectional survey data have been used to demonstrate an association between HIV criminalization and ART adherence (235, 236). Among 2,149 HIV-positive participants (29% women) recruited from 16 sites across Canada (n=100), China, Namibia, Thailand and the United States; residing in jurisdictions with HIV criminal laws was independently associated with reduced ART adherence (235). Possible mechanisms for this observation include fear of stigma, discrimination or forced disclosure associated with continued use of ART in the climate of criminalization. When data were limited to North American participants (n=1,873; 27% women), logistic regression revealed a significant positive association between self-reported ART adherence and residing in jurisdictions where HIV non-disclosure is criminalized, but no significant association between adherence and residing in locations where HIV transmission/exposure is criminalized (236). Possible pathways to explain these discordant findings are lacking. In particular, the small proportion of women, transgender individuals and minority groups in the study and an over-representation of participants from the United States (n=1,673) lead the authors to caution against reliably generalizing the findings to these populations and to settings outside the United States (236).

2.6. Limitations of Existing Literature

We identified only two Canadian studies exploring the effect of HIV non-disclosure criminalization on healthcare engagement specifically among WLWH. Similarly, there is a dearth of literature evaluating the impact of HIV non-disclosure criminalization on the healthcare engagement of individuals who already face the challenge of living in highly criminalized environments (including sex workers and women who use injection drugs), who may face unique barriers to HIV disclosure (71) and engagement with criminal justice and healthcare systems (36). Most Canadian evidence evaluating the effect of HIV non-disclosure criminalization on healthcare engagement emerges from studies conducted in Ontario, where the majority of Canadian non-disclosure prosecutions have occurred (85). Although legal precedents for HIV non-disclosure prosecutions set by the SCC are national in scope, their application may vary in different provincial and territorial jurisdictions (93). Furthermore, key affected populations and healthcare provision and delivery also vary across Canada (230, 237). As such, the impact of HIV non-disclosure criminalization on healthcare engagement may vary across health jurisdictions. Finally, the majority of Canadian studies included in this review were conducted before the 2012 SCC ruling, which increased the scope of criminal liability for HIV non-disclosure in Canada. Thus awareness and healthcare impacts of the 2012 SCC ruling remain undefined among Canadian PLWH.

2.7. Conclusion

Our comprehensive review of the evidence suggests that the criminalization of HIV non-disclosure may represent a structural barrier to healthcare engagement for some Canadian PLWH, discouraging access to HIV testing and linkage to HIV care services required to achieve viral suppression, which is important to promote both individual and population health benefits. We identified several key mechanisms through which the criminalization of HIV non-disclosure may compromise healthcare engagement, including provoking fears relating to the exposure of confidential medical information, and increasing surveillance and perceived stigma from healthcare providers and the public. This review also presents evidence to suggest that the criminalization of HIV non-disclosure may influence the clinical care provided by healthcare providers, due to

uncertainty around HIV non-disclosure case law and tensions between professional standards of healthcare and legal expectations.

Although the incidence of criminal charges for HIV non-disclosure to sexual partners among Canadian WLWH is low (85), our review suggests that the *threat* of criminal charges combined with a heightened perception of stigma and surveillance may alter the environment within which women navigate engagement with healthcare services. Expansion of routine HIV testing (238) and TasP strategies to meet ambitious UNAIDS treatment targets (19, 21), in addition to the use of evidence from HIV phylogenetic analysis in criminal trials of suspected HIV transmission in Canada and other international settings (239-241), may further reinforce the perception of heightened clinical surveillance reported by PLWH in the current legal climate.

Our review identified only two studies specifically evaluating the impact of criminalization of HIV non-disclosure on the healthcare engagement of Canadian WLWH (140, 202). This is a concern, given the growing number of WLWH in Canada, among whom marginalized women are overrepresented (100). WLWH may experience gender-specific challenges when navigating healthcare engagement within an environment shaped by the criminalization of HIV non-disclosure, due to antenatal HIV testing protocols (209) and unique sexual and reproductive healthcare needs (73). The evidence reviewed here suggests that the climate of criminalization may exacerbate gendered barriers to healthcare engagement (82, 134-138, 186-188, 190), particularly among the most marginalized women who already face significant barriers to healthcare engagement (100).

In the wake of the 2012 SCC ruling on HIV non-disclosure, there is a clear need to characterise awareness and understanding of the legal obligation to disclose among WLWH, who may be disproportionately impacted by this ruling due to gendered barriers to safe HIV status disclosure (130, 131, 139), negotiation of condom use (132, 133) and gender-based disparities in treatment outcomes identified in a Canadian context (8, 82, 134-138). Furthermore, there is a critical need for further research evaluating how women's healthcare engagement is influenced by living in an environment shaped by the criminalization of HIV non-disclosure. Capturing the experiences of marginalized women

who are disproportionately affected by HIV or underserved by health services is vital to fully appreciate the complex interplay between individual, social and structural-level factors when considering the awareness and healthcare impacts of HIV non-disclosure case law. Addressing these critical knowledge gaps will inform future public health initiatives to educate and support Canadian WLWH in the current legal climate, with the ultimate aims of optimising retention in HIV care and bolstering the case against the criminalization of HIV non-disclosure.

Table 2-1. Studies presenting data on the impact of the criminalization of HIV non-disclosure on healthcare engagement of people living with HIV that were discussed in Chapter 2.

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
Data collection commenced before R v. Mabior ruling.					
The problem of "significant risk": exploring the public health impact of criminalizing HIV non-disclosure (2011) (143) HIV non-disclosure and the criminal law: establishing policy options for Ontario (2010) *(Analysis among 25 service providers and 28 PLWH) (50)*	Ontario, Canada	Qualitative	56 participants: 28 service providers and 28 PLWH (n=11 women)	Individual semi-structured interviews and focus group discussions from January - September 2010 in Toronto, Ottawa and Hamilton	Impact of criminal law on: Linkage and retention in HIV care
How criminalization is affecting people living with HIV in Ontario (2012) (193) Impacts of criminalization on everyday lives of people living with HIV in Canada (2014) *(qualitative results only) (194)*	Ontario, Canada	Mixed methods	Qualitative: 122 PLWH (n=19 women) enrolled in the Ontario HIV Treatment Network Cohort Study (OCS). Quantitative: 925 PLWH enrolled in OCS or Positive Spaces, Healthy Places (PSHP) cohort (n=216 women)	In-depth interviews with 122 PLWH in Ontario Participant responses to questions on HIV and the law captured in the OCS and PSHP 2009-2010 questionnaires	Impact of criminal law on: HIV testing Linkage and retention in HIV care

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
Impact of prosecution of non-disclosure of HIV status on attitudes and behavior of HIV-negative and HIV-positive MSM in Toronto, Ontario (2013) (206)	Ontario, Canada	Quantitative	442 sexually active MSM (292 HIV-positive and 150 HIV-negative)	Detailed questionnaire completed at a Toronto medical clinic between 2010-2012	Impact of criminal law on: HIV diagnosis and testing
Nondisclosure prosecutions and population health outcomes: examining HIV testing, HIV diagnoses, and the attitudes of men who have sex with men following nondisclosure prosecution media releases in Ottawa, Canada (2013) (145)	Ontario, Canada	Mixed methods	Qualitative: 27 MSM (12 HIV-positive and 15 HIV-negative)	Investigated trends in monthly HIV tests among MSM, conducted in the Ottawa Public Health region, 2008-2011 Semi-structured interviews after a high profile nondisclosure media release in May 2010	Impact of criminal law on: HIV diagnosis and testing Linkage and retention in HIV care
Sexual practices and STI/HIV testing among gay, bisexual and men who have sex with men in Ottawa, Canada: examining nondisclosure prosecutions and HIV prevention (2013) (144) Nondisclosure prosecutions and HIV prevention: results from an Ottawa-based gay men's sex survey (2013) *(Analysis among 441 participants) (146)*	Ontario, Canada	Quantitative	Convenience sample of 721 sexually active HIV positive and negative gay, bisexual, and other MSM in Ottawa	Anonymous surveys self-administered in 14 venues across Ottawa, including bath houses, medical clinics, gay bars and HIV/AIDS organizations	Impact of criminal law on: HIV diagnosis and testing Linkage and retention in HIV care

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
Male Call Canada (2013) (199)	National, Canada	Quantitative	Nationally representative sample of 1235 HIV positive and negative MSM	Cross-sectional national telephone survey of MSM from October 2011–February 2012	Impact of criminal law on: HIV diagnosis and testing
HIV and AIDS in Canada: A National Survey (2012) (205)	National, Canada	Quantitative	National sample of 2,139 people living in Canada aged ≥16 (52% women)	Cross-sectional national telephone and online survey administered in May 2011	Impact of criminal law on: HIV diagnosis and testing
HIV Criminalization and Nursing Practice (2012) (224)	Ontario, Canada	Qualitative	47 service providers, working in nursing, medicine, law and social work in Ontario	8 focus group discussions of 6 individuals facilitated by nursing students were conducted during a meeting on HIV Criminalization & Nursing Practice in 2011 in Ontario	Impact of criminal law on: Linkage and retention in HIV care
The impact of HIV/AIDS criminalization on awareness, prevention and stigma: a qualitative analysis on stakeholder's perspectives in Ontario, Canada (2012) (204)	Ontario, Canada	Qualitative	Purposive sample of 14 stakeholders from Ontario, including 5 executive directors of HIV organizations, 5 front-line employees of HIV organizations, 4 policy/content experts	Semi-structured interviews conducted over the telephone in Ontario	Impact of criminal law on: HIV diagnosis and testing

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
The criminalization of HIV non disclosure: what does it mean for policy and practice for a women-specific ASO? (2015) (202)	British Columbia, Canada	Qualitative	60 women living with HIV in Vancouver	6 focus groups conducted at an AIDS Service Organization in Vancouver (Positive Women's Network), 2010-2014	Impact of criminal law on: HIV diagnosis and testing in HIV care
The Sero Project: National Criminalization Survey Preliminary Results, (2012) (234)	National, United States	Quantitative	2076 PLWH across the United States (13% women)	Online National HIV Criminalization Survey administered between June and July 2012	Impact of criminal law on: Access and adherence to ART
Freedom to adhere: the complex relationship between democracy, wealth disparity, social capital and HIV medication adherence in adults living with HIV (2012) (235) Associations between the legal context of HIV, perceived social capital, and HIV antiretroviral adherence in North America (2013) *(Analysis among North American participants) (236)*	International	Quantitative	2,149 PLWH (29% women) from 16 sites across Canada, China, Namibia, Thailand, the United States including Puerto Rico (n=100 participants from Canada) Sub-analysis conducted among 1,873 PLWH (27% women) from Canada, United States including Puerto Rico	Cross-sectional survey data from the international nursing collaborative study. Drawn from convenience sample of PLWH recruited from infectious disease clinics and AIDS Service Organizations between August 2009 and January 2012 Data on HIV criminal law were drawn from the published literature	Impact of criminal law on: Access and adherence to ART

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
Data collection commenced after R v. Mabior ruling.					
The impact of criminalization of non-disclosure of HIV positive status on racialized communities (2013) (55)	Ontario, Canada	Qualitative	62 participants, including: African/Black men and women living with HIV, mental health service providers, individuals working in community agencies, academics, lawyers, government officers	Semi-structured interviews and Arts-based research methods conducted in the Greater Toronto Area	Impact of criminal law on: Linkage and retention in HIV care
"Using a stick to beat people down": perceptions of criminalization of HIV non-disclosure and testing practices among men in Nova Scotia (2014) (203)	Newfoundland, Canada	Qualitative	Six health professionals who work with men living with HIV in Nova Scotia	Two focus groups held in Nova Scotia.	Impact of criminal law on: HIV diagnosis and testing
Sexuality, prevention work & the criminalization of non-disclosure of HIV (2014) (225)	Ontario, Canada	Qualitative	40 people living with HIV and 15 prevention workers	Qualitative interviews conducted in Toronto	Impact of criminal law on: Linkage and retention in HIV care
The effect of R v. Mabior on HIV/AIDS service provision (2014) (226)	Ontario, Canada	Qualitative	15 HIV/ AIDS service providers, working in HIV/AIDS prevention of supportive services	Semi-structured interviews in Toronto	Impact of criminal law on: Linkage and retention in HIV care

Publications	Study setting	Methodology	Study population and sample size	Data collection	Outcomes relevant to literature review objectives
Judging mothers: criminalization's creep into the health and social care of HIV-positive mothers (2014) (140)	Ontario, Canada	Qualitative	77 pregnant women living with HIV from Ontario (participants of the HIV mothering study)	Interviews conducted with women in their 3rd trimester and 3 and 12 months postpartum in Ontario	Impact of criminal law on: Linkage and retention in HIV care
Discussing the Limits of Confidentiality: The Impact of Criminalizing HIV Nondisclosure on Public Health Nurses' Counseling Practices (2014) (227) Examining public health nurses' documentary practices: the impact of criminalizing HIV non- disclosure on inscription styles (2015) (228)	Ontario, Canada	Qualitative	Purposive sample of 30 nurses with experience working as HIV case manager from four public health departments	One-on-one semi-structured interviews in Ontario	Impact of criminal law on: Linkage and retention in HIV care

Chapter 3. Prevalence and predictors of facing a legal obligation to proactively disclose HIV serostatus to sexual partners among people living with HIV who inject drugs in a Canadian setting.

3.1. Abstract

Background: In October 2012, the Canadian Supreme Court ruled that people living with HIV (PLWH) must disclose their HIV status before sex that poses a "realistic possibility" of HIV transmission, clarifying that in circumstances where condom-protected penile–vaginal intercourse occurred with a low viral load (<1500 copies/mL), the realistic possibility of transmission would be negated. We estimated the proportion of PLWH who use injection drugs who would face a legal obligation to disclose under these circumstances.

Methods: We used cross-sectional survey data from a subset of participants enrolled in a cohort of PLWH who use illicit drugs. Participants interviewed since October 2012 who self-reported recent penile–vaginal intercourse and who had previously used injection drugs were included. Participants self-reporting 100% condom use with a viral load consistently <1500 copies/mL were assumed to have no legal obligation to disclose. Logistic regression identified factors associated with facing a legal obligation to disclose.

Results: We included 176 participants (44% female), of whom 94% had a low viral load, and 60% self-reported 100% condom use during penile-vaginal intercourse. If condom use and low viral load were sufficient to negate the realistic possibility of transmission, 44% of participants would face a legal obligation to disclose. Factors associated with facing a legal obligation to disclose were female sex (adjusted odds ratio [OR] 2.19, 95% confidence interval [CI] 1.13–4.24), having 1 recent sexual partner (vs. > 1) (adjusted

OR 2.68, 95% CI 1.24–5.78) and being in a stable relationship (adjusted OR 2.00, 95% CI 1.03–3.91).

Conclusion: Almost half the participants in this analytic sample would face a legal obligation to disclose to sexual partners under these circumstances (with an increased burden among women), adding further risk of criminalization within this marginalized and vulnerable community.

3.2. Introduction

Since the late 1980s, existing criminal or HIV-specific laws have been used in many settings worldwide to prosecute people living with HIV (PLWH) alleged to have put others at risk of acquiring HIV (28). Most of these criminal prosecutions against PLWH have occurred in North America (28). Canada has the second highest absolute number of convictions of PLWH globally (28, 242). At the time of writing, an estimated 181 Canadians had been charged for allegedly failing to disclose their HIV status to sexual partners (178). Most people accused of HIV non-disclosure in Canada have faced charges of aggravated sexual assault, based on the legal interpretation that non-disclosure of HIV status represents fraud, vitiating consent to an otherwise consensual sexual encounter. A conviction of aggravated sexual assault can carry a maximum sentence of life imprisonment and mandatory life-long registration as a sexual offender, even in the absence of HIV transmission.

A new precedent for the use of the criminal law against PLWH in Canada was set on October 5, 2012, when the Supreme Court of Canada (SCC) released its ruling on two major cases (89, 90). Proactive serostatus disclosure by a person living with HIV must now precede any sexual activity that poses a "realistic possibility" of HIV transmission. The SCC suggested that in circumstances where a person living with HIV engaged in condom-protected penile-vaginal intercourse with a low plasma HIV RNA viral load (defined by the SCC as <1500 copies/mL), there would be no realistic possibility of HIV transmission, thus no legal duty to disclose (90). Whether this legal test would hold true for sexual encounters other than penile-vaginal intercourse was not clarified by the court.

Establishing the absence of a realistic possibility of HIV transmission may be possible for circumstances other than condom-protected penile-vaginal sex with a low viral load, depending on the evidence presented during criminal trials. Indeed, the SCC indicated that differing circumstances and treatment advances could lead to future adaptations of this legal position (90). Lower courts may find greater flexibility in their interpretation of the realistic possibility of HIV transmission. After the 2012 SCC ruling, a teenage boy was acquitted of aggravated sexual assault in the Nova Scotia Youth

Justice Court after allegedly failing to disclose his HIV status before an episode of penile-vaginal intercourse (243). Based on evidence presented during the trial, the presiding judge deemed that there was no realistic possibility of HIV transmission in the context of an undetectable HIV viral load, regardless of whether or not a condom was used. However, in the absence of consistency in the application of the SCC's legal test by the lower courts, it is safest for PLWH to assume the strictest interpretation of this ruling to protect themselves from prosecution.

There is no consensus regarding the effectiveness of legally enforced disclosure as an HIV prevention tool (244). Concerns remain that the criminalization of HIV non-disclosure fails to acknowledge the significant challenges of HIV disclosure, including secondary disclosure, isolation, rejection by partners, friends and family, violence, stigma and discrimination (71, 131, 139). The literature suggests that PLWH who inject drugs face unique barriers to safe disclosure in the criminalized environment in which they live, navigate sexual relationships, and seek care (71, 245, 246); including loss of income, drugs or housing, and threats to personal safety in the form of emotional, physical and sexual violence (71, 184, 245).

Using cross-sectional data from a community-recruited cohort of PLWH who inject drugs, we estimated the proportion of participants who would face a legal obligation to disclose their HIV status before penile-vaginal intercourse if both condom use and a low viral load were required to remove the realistic possibility of HIV transmission, and avoid criminal liability for HIV non-disclosure.

3.3. Methods

3.3.1. Data Source

The AIDS Care Cohort to evaluate Exposure to Survival Services (ACCESS) is an ongoing observational prospective cohort study of PLWH who use illicit drugs in Vancouver. The study has been described previously (247). Briefly, individuals were eligible for study participation if they were HIV-positive, aged 18 years or older and had used illicit drugs other than cannabis in the 30 days before baseline interview.

Recruitment of ACCESS participants began in 2005 and is ongoing. Snowball sampling methods are used, building on self-referral, word of mouth, and extensive street outreach, with recruitment materials displayed in clinics and storefront agencies. Recruitment efforts are focused in the Downtown Eastside area of Vancouver; the site of an explosive outbreak of HIV infection among PLWH who inject drugs and their sexual partners beginning in the mid-1990s (248). This area has high levels of illicit drug use, homelessness and poverty, and an active open drug market.

At recruitment, participants complete a baseline interviewer-administered questionnaire, which elicits information on lifetime and recent characteristics, behaviours and exposures, and a nurse-led questionnaire and interview, which includes blood tests for HIV clinical monitoring. At six-month intervals, participants are invited to complete follow-up interviews and nursing examinations. Within the cohort, loss to follow-up (defined as missing all interviews in the preceding 12 months) is 6 (interquartile range: 5, 7) per 100 person-years.

HIV treatment records and clinical profiles held by the British Columbia Centre for Excellence in HIV/AIDS Drug Treatment Program are accessed for all ACCESS participants through a secure, confidential linkage. The British Columbia Centre for Excellence in HIV/AIDS provides medications and clinical monitoring tests, free of charge to all PLWH in British Columbia through the government's universal healthcare plan (249).

The ACCESS study's semi-annual follow-up and confidential linkage to comprehensive HIV clinical data through the Drug Treatment Program permits longitudinal evaluation of the interrelationships of behavioural, environmental and social-structural exposures on access and adherence to antiretroviral therapy (ART) and HIV disease progression among more than 950 PLWH who use illicit drugs (cohort size at the time of writing). ACCESS has been approved by the University of British Columbia/Providence Healthcare Research Ethics Board. All participants provide written informed consent to participate in the study, and are compensated $30 for each study visit. The survey does not collect data on HIV disclosure practices, thus this analysis

does not present behaviours that could be interpreted as legal offences under Canadian HIV non-disclosure case law.

3.3.2. Eligibility Criteria

This cross-sectional analysis included ACCESS participants who had completed an interview since October 5 2012, to capture sexual risk behaviours and viral profile since the 2012 SCC ruling. We restricted inclusion to participants with a history of injection drug use, who had at least one viral load and CD4 measurement within 180 days of their baseline visit, and for whom information on condom use was available. If a participant completed more than one interview during the study period, data were drawn from the later interview. We restricted inclusion to participants who were sexually active, defined as self-reporting penile-vaginal intercourse with commercial or non-commercial sex partners in the six-month period before the interview. Penile-vaginal intercourse was the focus of this analysis because this was the type of sexual activity on which the SCC's 2012 ruling was based. The SCC has yet to rule on HIV non-disclosure prosecutions in the context of anal or oral sex. The date of administrative censoring was November 30, 2013.

3.3.3. Measures

Primary Outcome

We sought to identify participants who would face a legal obligation to disclose their HIV status to sexual partners if condom-protected penile-vaginal intercourse in the context of a low viral load (<1500 copies/mL) was sufficient to negate the realistic possibility of HIV transmission, and thus avoid criminal liability for HIV non-disclosure. Participants who self-reported 100% condom use during all episodes of penile-vaginal intercourse, and who also achieved viral load measurements consistently lower than 1500 copies/mL within six months before the study interview were assumed to face no legal obligation to disclose their HIV status to sexual partners. We assumed that participants would face a legal obligation to disclose if they self-reported less than 100% condom use (regardless

of viral load), or if they failed to achieve a viral load consistently less than 1500 copies/mL (regardless of condom use).

Explanatory Variables

Explanatory variables were selected based on perceived importance following a comprehensive literature review (159), and availability within the ACCESS dataset. We considered the following explanatory variables: age (per year increase); sex (female vs. male); ethnicity (Caucasian vs. non-Caucasian); recent injection drug use (yes vs. no); recent illicit drug use (excluding cannabis) (yes vs. no); homeless, defined as living on the streets or with no fixed address (yes vs. no); employment in a regular or temporary job, or self-employed (yes vs. no); sex work, defined as exchange of sex for money, drugs, clothing, or other property (yes vs. no); incarceration, defined as being in detention, prison or jail (yes vs. no); stable relationship, defined as being legally married or common-law, or having a regular partner (yes vs. no); and number of recent commercial and non-commercial sex partners (1 vs. >1). All non-fixed variables referred to behaviours or exposures in the six-month period before the interview, except for homelessness and relationship status, which referred to current status. We defined HIV treatment status by assessing the number of days participants had been dispensed ART in the six months before the interview (≥ 1 vs. 0 days). Although previous injection drug use was specified as an inclusion criterion for this analysis, we included recent injection drug use as a covariate to signify ongoing injection drug use.

3.3.4. Statistical Analysis

We calculated the proportion of participants who would face a legal obligation to proactively disclose HIV serostatus to sexual partners under the aforementioned circumstances. Sociodemographic, behavioural, and clinical characteristics were compared between participants who would face a legal obligation to disclose versus those who would not, using Pearson's χ-squared test for categorical variables (Fisher's exact test for small cell counts), and the Wilcoxon rank-sum test for continuous variables. Logistic regression identified independent covariates of facing a legal

obligation to disclose. Candidates for model inclusion were variables having p <0.2 in the bivariable analysis, or variables considered *a priori* to influence likelihood of facing a legal obligation to disclose following literature review (159).

Imputation methods were used to recode data for 10 participants for whom data related to number of recent sexual partners were missing. Specifically, the median number of sexual partners within the cohort was assigned to participants for whom data were not available. This method was used to preserve statistical power and avoid biases associated with excluding these participants from the model.

Model construction was based on the backwards selection approach and Akaike Information Criterion (AIC). The most parsimonious model was selected as the model with the lowest AIC value. We computed the Variance Inflation Factor to quantify the degree of collinearity present in the regression analysis on the basis that a strong correlation between variables would increase the variance of the coefficients, complicating interpretation of the model output. The Variance Inflation Factor was <1.2 for all variables in the final model, suggesting that no collinearity was present. P values were two-sided and considered statistically significant at <0.05. All statistical analyses were conducted using the SAS software version 9.3 (SAS Institute Inc., Cary, NC).

3.4. Results

After applying the inclusion criteria, 176 (56% male) of the 834 ACCESS participants recruited between 2005 and 2013 were included in our analytic sample**.** We excluded 97 participants who did not have at least one viral load and CD4 count test recorded within 180 days of their earliest interview; 47 participants without a history of injection drug use; 204 participants who had not completed an interview since October 5, 2012; 307 participants who reported no episodes of penile-vaginal intercourse within six months of the interview; and 3 participants for whom data on condom use were not available **(Figure 3.1)**.

The characteristics of the analytic sample are presented in **Table 3.1**. Of the 176 participants included in this analysis, 10 (6%) failed to achieve a viral load consistently

lower than 1500 copies/mL, and 70 (40%) self-reported less than 100% condom use during penile-vaginal intercourse within the six-month period before the study interview. Among the 166 participants who consistently achieved a viral load lower than 1500 copies/mL, 67 (40%) reported less than 100% condom use. If both condom use and a viral load of less than 1500 copies/mL were required to negate the realistic possibility of HIV transmission and avoid criminal liability for HIV non-disclosure, 77 (44%) participants would face a legal obligation to proactively disclose their HIV status to sexual partners (**Table 3.2**). However, if either consistent condom use *or* a viral load of less than 1500 copies/mL were sufficient to negate the realistic possibility of HIV transmission, only 3 (2%) participants would face a legal obligation to disclose (0% of male participants, 4% of female participants).

When stratifying the results by sex, 35% of male vs. 55% of female participants would face a legal obligation to proactively disclose their HIV serostatus to sexual partners if both condom use and a viral load of less than 1500 copies/mL were required to negate the realistic possibility of HIV transmission ($p = 0.011$). Compared to male participants, significantly fewer female participants achieved a viral load of less than 1500 copies/mL (90% vs. 98%, $p = 0.022$) and significantly fewer female participants self-reported 100% condom use (52% vs. 67%, $p = 0.048$) in the six-month period before the study interview.

In the multivariable logistic regression model, factors independently associated with facing a legal obligation to disclose were female sex (adjusted odds ratio [AOR]: 2.19, 95% confidence interval [CI]: 1.13-4.24); having only one recent sexual partner (vs. >1 partners) (AOR: 2.68, 95% CI: 1.24-5.78); and being in a stable relationship (AOR: 2.00, 95% CI: 1.03-3.91) (**Table 3.3**).

3.5. Discussion

Among sexually active participants in a community-recruited cohort of PLWH who inject drugs, we found that almost half the participants would face a legal obligation to proactively disclose HIV serostatus to sexual partners if both condom use and a low viral load were required to negate the realistic possibility of HIV transmission. In a

multivariable model, facing a legal obligation to disclose under these circumstances was positively associated with female sex, being in a stable relationship and having only one recent sexual partner.

Facing a legal obligation to disclose was driven primarily by inconsistent condom use rather than viral load in this analysis. It should be noted that ACCESS is an older, treatment-experienced cohort in a province with an ongoing Treatment-as-Prevention initiative (15, 250) and universal access to healthcare free of charge; including all HIV treatment, care and medications. In other jurisdictions where such initiatives are not widespread, additional challenges to the uptake of and adherence to ART may be encountered, which may compromise the ability to satisfy this legal test for HIV non-disclosure. Indeed, studies in other North American settings have found that members of marginalized and vulnerable groups, including people who inject drugs (82, 134, 136, 137), ethno-racial minorities (251), sex workers (81) and homeless individuals (252), experience barriers to accessing ART and achieving sustained viral suppression.

We found that women were significantly more likely to face a legal obligation to disclose if both condom use and a low viral load were required to negate the realistic possibility of HIV transmission, driven by both viral load and condom use. Previous Canadian work has shown that women experience poorer HIV-related clinical outcomes compared to men, mediated by suboptimal engagement and retention within HIV services, and lower adherence to ART (8, 82, 134, 136, 137, 189). Inconsistent condom use among women living with HIV (WLWH) is similarly well-described in the literature, and has been attributed to fertility desire and serocondordant partnerships, in addition to challenges negotiating condom use, including gendered power imbalances, fear of inadvertent status disclosure, and the threat of violence (68, 133, 253, 254). Marginalized WLWH may experience additional socio-structural barriers to insisting upon safer sex practices, particularly those who are economically disadvantaged and who engage in survival sex work (131, 255, 256), compromising their ability to avoid criminal liability for HIV non-disclosure through both achievement of a low viral load and condom use.

The observed sex-based difference in facing a legal obligation to disclose is a particular concern, as previous work has shown that women experience unique barriers to HIV disclosure (70, 71, 257); particularly those who face power inequality within dependent partnerships and risk violence or abandonment associated with disclosure (70, 183, 184). A recent cross-sectional study among harder-to-reach PLWH in Vancouver found that women were significantly less likely to disclose to new sexual partners compared to heterosexual male counterparts (130).

Participants in a stable relationship were more likely to face a legal obligation to proactively disclose to sexual partners based on the interpretation of the legal test for HIV non-disclosure applied in this analysis. Unsurprisingly, this finding is driven by inconsistent condom use. This observation is supported by a previous analysis within ACCESS, which reported an independent association between condomless sex and partnered relationship status (255), and literature from other international settings (258-260). Previous work has shown that PLWH are more likely to disclose to regular versus casual sexual partners (261-263), thus it stands to reason that many ACCESS participants who are in a stable relationship will have disclosed to their partners and made a mutual decision to engage in condomless sex. Participants with only one recent sexual partner were also more likely to face a legal obligation to proactively disclose, which was similarly driven by inconsistent condom use. We expect that participants with more than one sexual partner are less likely to proactively disclose, and more likely to insist on condom use. Previous work supports that PLWH with one versus multiple sexual partners are more likely to self-report disclosing to partners (264).

Notably, if either condom use or a low viral load during penile-vaginal sex were sufficient to negate the realistic possibility of HIV transmission, and avoid criminal liability for HIV non-disclosure, 98% of participants in our cohort would face no legal obligation to disclose to sexual partners. Public health and human rights advocates have argued that, at a minimum, either condom use or a suppressed viral load during vaginal or anal sex should be sufficient to remove the legal obligation to disclose (emphasizing that additional factors might also be relevant in determining HIV transmission risk on a case-by-case basis) (265). Furthermore, they maintain that the legal obligation to disclose should be removed in cases where there is very low risk of HIV transmission, such as in

cases of oral sex (85, 265). The requirement of both condom use and a low viral load to negate the realistic possibility of sexual HIV transmission stands in conflict with evidence-based science that shows the dramatic reduction in HIV transmission risk associated with either ART-related viral suppression (10, 12-14, 98) or condom use (175). A recent consensus statement by Canadian HIV experts forcefully argues that empirical evidence does not justify the current use of the criminal law against PLWH in Canada (43). This statement has since been endorsed by more than 75 scientists and clinicians across Canada (266).

It must be acknowledged that many ACCESS participants will disclose their HIV status to sexual partners, thus will not be at risk of criminal charges regardless of condom use or viral load. Disclosure practices are not measured within the ACCESS survey; however, a cross-sectional survey of treatment-experienced PLWH in Vancouver found that the majority (73%) of participants self-reported disclosing their HIV serostatus to all new sexual partners (130).

Readers should be aware of some limitations to our study. Because data on HIV serostatus of sexual partners are not routinely collected within the ACCESS survey, we could not identify seroconcordant partnerships where legal concerns around HIV exposure and transmission may be reduced, rates of disclosure may be higher (263), and condom use may be lower (267). Condom use was self-reported in the ACCESS survey, therefore subject to recall and social desirability reporting biases, resulting in potential underestimation of the proportion of participants who would face a legal obligation to disclose.

Findings from this analysis may not be generalizable to non-Canadian settings owing to the specificity of Canadian HIV non-disclosure case law. On account of the ambitious provincial scale-up of Treatment-as-Prevention in British Columbia (15, 250), our findings may underestimate the number of PLWH who inject drugs who would face a legal obligation to disclose in other provinces, where they may experience additional barriers to engagement with HIV treatment.

3.6. Conclusion

We observed that if both condom use and a low viral load are required to remove the realistic possibility of HIV transmission and avoid criminal liability for HIV non-disclosure, almost half of the participants in a sample of PLWH who use injection drugs may risk criminal prosecution should they not disclose their HIV serostatus to sexual partners. Our study reveals another dimension to how the criminal justice system can shape the health and lives of PLWH who inject drugs, reinforcing the critical need for public health initiatives to address barriers to HIV treatment and support safe HIV status disclosure within marginalized communities.

Among this highly marginalized and criminalized cohort, women were at increased risk of prosecution if they did not disclose their HIV status. Our findings contravene the belief that HIV criminalization is a means of protecting women; a rationale previously used to support the expansion of the use of criminal law against PLWH (179). While women are underrepresented among defendants in Canadian HIV non-disclosure prosecutions to date (85), marginalized women feature prominently among those who have faced criminal charges (112); including women who have used illicit drugs, survivors of violence and abuse, and Indigenous women (112, 168). Our findings suggest that current HIV non-disclosure case law may disproportionately impact the most marginalized and vulnerable WLWH in Canada. Future work should evaluate the awareness and impacts of the 2012 SCC ruling among WLWH in Canada who are disproportionately affected by HIV or underserved by health services, and who encounter considerable barriers to safe HIV serostatus disclosure.

Table 3-1. Characteristics of 176 people living with HIV who inject drugs, stratified by satisfaction of the specified legal test for HIV non-disclosure.

	All participants (n=176, 100%)	Satisfy legal test (n=99, 56%)	Do not satisfy legal test (n=77, 44%)	
Variable	**Median [IQR] or n (%)**			**P value**
Age (in years)	45 (40 – 51)	46 (41 – 52)	44 (39 – 50)	0.070
Caucasian ethnicity				
Yes	93 (53)	49 (49)	44 (57)	0.313
No	83 (47)	50 (51)	33 (43)	
Female sex				
Yes	77 (44)	35 (35)	42 (55)	0.011
No	99 (56)	64 (65)	35 (45)	
Homeless				
Yes	21 (12)	9 (9)	12 (16)	0.242
No	155 (88)	90 (91)	65 (84)	
Employed in L6M				
Yes	44 (25)	25 (25)	19 (25)	0.930
No	132 (75)	74 (75)	58 (75)	
Incarcerated in L6M				
Yes	10 (6)	4 (4)	6 (8)	0.337
No	166 (94)	95 (96)	71 (92)	
Illicit drug use in L6M[†]				
Yes	162 (92)	93 (94)	69 (90)	0.401
No	14 (8)	6 (6)	8 (10)	
Injection drug use in L6M				
Yes	117 (66)	66 (67)	51 (66)	0.952
No	59 (34)	33 (33)	26 (34)	
≥1 day ART dispensation in L6M				
Yes	168 (95)	98 (99)	70 (91)	0.022
No	8 (5)	1 (1)	7 (9)	

	All participants (n=176, 100%)	Satisfy legal test (n=99, 56%)	Do not satisfy legal test (n=77, 44%)	
Variable	**Median [IQR] or n (%)**			**P value**
Sex work in L6M				
Yes	29 (16)	19 (19)	10 (13)	0.271
No	147 (84)	80 (81)	67 (87)	
Currently in a stable relationship				
Yes	74 (42)	31 (31)	43 (56)	0.001
No	102 (58)	68 (69)	34 (44)	
Number of sexual partners in L6M¶				
1	124 (70)	61 (62)	63 (82)	0.004
>1	52 (30)	38 (38)	14 (18)	

L6M: in the six months before interview; ART: antiretroviral therapy

† excluding cannabis use; ¶ median imputation was used to recode missing data for 10 participants.

Table 3-2. Patterns of condom use stratified by plasma HIV-1 RNA viral load (<1500 vs. ≥1500 c/mL) among 176 male and female people living with HIV who inject drugs.

All participants (n=176)		
	Viral load <1500 c/mL, n (%)	Viral load <1500 c/mL, n (%)
Condom use		
100%	99 (56)	7 (4)
<100%	67 (38)	3 (2)
Male participants (n=99)		
	Viral load <1500 c/mL, n (%)	Viral load ≥1500 c/mL, n (%)
Condom use		
100%	64 (65)	2 (2)
<100%	33 (33)	0 (0)
Female participants (n=77)		
	Viral load <1500 c/mL, n (%)	Viral load ≥1500 c/mL, n (%)
Condom use		
100%	35 (45)	5 (7)
<100%	34 (44)	3 (4)

Table 3-3. Crude and adjusted odds ratios for correlates of facing a legal obligation to disclose HIV serostatus to sexual partners among 176 people living with HIV who inject drugs.

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age		
Per year increase	0.96 (0.93 – 1.00)	Not selected
Gender		
Female vs. male	2.19 (1.19 – 4.04)	2.19 (1.13 – 4.24)
Homeless		
Yes vs. no	1.85 (0.74 – 4.64)	2.50 (0.93 – 6.76)
Incarcerated in L6M		
Yes vs. no	2.01 (0.55 – 7.38)	Not selected
Sex work in L6M		
Yes vs. no	0.63 (0.27 – 1.44)	Not selected
Currently in a stable relationship		
Yes vs. no	2.77 (1.49 – 5.15)	2.00 (1.03 – 3.91)
Number of sexual partners in L6M¶		
1 vs. >1	2.80 (1.38 – 5.68)	2.68 (1.24 – 5.78)

¶ median imputation was used to recode missing data for 10 participants.
CI: 95% Confidence Interval; OR: Odds Ratio; L6M: within the 6 months before interview.

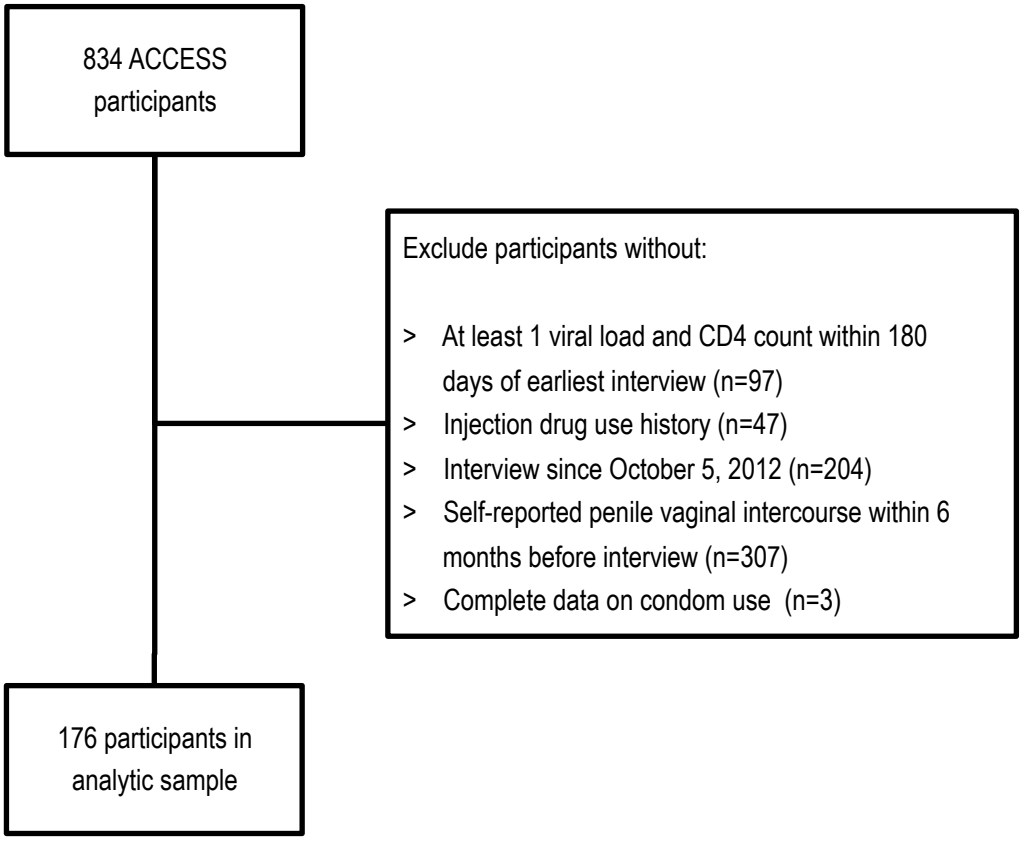


Figure 3-1. Exclusion criteria applied to select analytic sample.

Chapter 4. Awareness, understanding, and perceived impacts of HIV non-disclosure case law among people living with HIV who use illicit drugs in a Canadian setting

4.1. 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 that posed a "realistic possibility" of HIV transmission. Condom-protected vaginal sex with a low HIV viral load was deemed sufficient to avert the legal duty to disclose. Awareness, understanding, and perceived impacts of this ruling remain uncharacterized, particularly among marginalized and criminalized PLWH.

Methods: We used data from the ACCESS study, a community-recruited cohort of PLWH who use illicit drugs in Vancouver. The primary outcome was self-reported awareness of the 2012 SCC ruling. Using survey data, we also assessed understanding of the legal obligation to disclose, sources of information about HIV disclosure and the law, and perceived impacts of HIV non-disclosure case law. Multivariable logistic regression identified factors independently associated with awareness of the 2012 SCC ruling.

Results: Among 249 participants (39% female), the median age was 50 (IQR: 44-55) and 80% had a suppressed HIV viral load (<50 copies/mL) within the six months before interview. The minority (n=112, 45%) of participants reported awareness of the 2012 SCC ruling, but only 44 (18%) participants reported a complete understanding of the legal obligation to disclose. Among those aware of the ruling (n=112), newspapers/media (46%) was the most frequent source from which participants learned

about the ruling. Half (51%) of participants who were aware of the ruling reported that no healthcare providers had talked to them about the HIV non-disclosure case law. The majority (56%) of all participants reported that the HIV non-disclosure case law might influence the type of information PLWH would share with healthcare providers. Awareness of the 2012 SCC ruling was negatively associated with HIV viral load 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).

Conclusion: Most participants in this cohort of PLWH who use illicit drugs were unaware of the 2012 SCC ruling, which may place them at risk of prosecution. Notably, discussions about HIV disclosure and the law were lacking in healthcare settings. Clarifying the role of health and social care providers in educating PLWH about the legal obligation to disclose is critical to mitigate the negative impacts of the criminalization of HIV non-disclosure on the health and rights of PLWH.

4.2. Introduction

The insight that plasma HIV RNA viral load suppression through optimal adherence to antiretroviral therapy (ART) dramatically reduces the risk of onward viral transmission (14, 16, 98, 268) has led to the implementation of Treatment-as-Prevention (TasP)-based strategies in many settings worldwide (20). In addition to its impacts on rates of HIV/AIDS morbidity, mortality and viral transmission (15, 269), this public health-based HIV prevention and treatment approach seeks to normalize HIV testing and redefine the illness as a chronic, manageable disease (15). 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 (2, 36). In at least 49 countries, PLWH have been prosecuted for HIV transmission, exposure, or non-disclosure (2). Critics of this approach argue that the application of punitive criminal and HIV-specific laws directly undermines HIV prevention and treatment efforts to normalize HIV (44).

Although there is no evidence to support the use of criminal law as an effective HIV prevention strategy (41), the criminalization of HIV non-disclosure has been shown to represent a structural barrier to the healthcare engagement of PLWH (41, 42, 159). 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 (136, 270-272). 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 (136, 270-273).

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 (28). At least 181 people have faced charges for HIV non-disclosure since the late 1980s (161), with socio-economically marginalized individuals notably overrepresented (85). The exceptional legal framework within which cases of

HIV non-disclosure are treated in Canada sets HIV apart from other infectious diseases within the criminal justice system, advancing HIV-related stigma and public misconceptions about the reality of living with HIV in the modern ART era (44).

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 (89, 90). The SCC justices ruled 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 HIV RNA viral load (defined by the court as <1500 copies/mL plasma) would be sufficient to avoid the legal obligation to proactively disclose to sexual partners, but failed to comment on the application of this ruling to sexual conduct other than penile-vaginal intercourse. While the SCC suggested that the interpretation of the "realistic possibility" test may vary based on case-specific circumstances and scientific advances (90) (and lower courts have deviated from the SCC's reading of this legal test (243)) PLWH must assume the strictest interpretation to minimise their risk of prosecution in the current legal climate.

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 (92, 97). In 1998, the SCC deemed that PLWH had a legal obligation to proactively disclose their HIV status to sexual partners before sex that represented a "significant risk" of HIV transmission (92). While the SCC justices did not clarify the interpretation of this legal test within their ruling, several lower courts subsequently determined that condom use was sufficient to remove the significant risk of HIV transmission and avert criminal liability for HIV non-disclosure (93). In the wake of the 2012 SCC ruling, some clinicians, public health experts, and human rights activists have criticised the SCC's suggestion that both condom use and a low viral load are required to avoid the "realistic possibility" of HIV transmission, maintaining that this interpretation is based on conceptions of HIV transmission risk inconsistent with scientific evidence (43, 266, 274), 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 (99).

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 in the wake of the 2012 SCC ruling, (226). However, evaluation of the awareness and understanding of the legal obligation to disclose HIV serostatus to sexual partners, and perceived impacts of criminalization of HIV non-disclosure remain largely unexplored among the most marginalized Canadian PLWH since this ruling (159). 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, in order to develop strategies to support informed decision-making in the current legal climate. Furthermore, assessing how HIV non-disclosure case law shapes interactions between healthcare providers and PLWH who face substantial barriers to sustained healthcare engagement is critical to inform strategies to mitigate the harms incurred by the use of criminal law against PLWH.

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. Finally, we considered the perceived impacts of HIV non-disclosure case law on healthcare engagement, sexual conduct and disclosure practices.

4.3. Methods

4.3.1. 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. The study has been described in detail previously (247). Briefly, individuals were eligible for the study if they were HIV-positive, aged ≥18 years and had used illicit drugs other than cannabis at least once in the 30 days prior to 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 (248). 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 (15, 269). Due to extensive harm reduction initiatives and expanded ART access, the number of new cases of HIV among people who use injection drugs in the DTES has declined by more than 90% (275). The DTES has 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 (249), housed at the BC Centre for Excellence in HIV/AIDS in Vancouver. The Drug Treatment Program administers all HIV/AIDS treatment, including medications and clinical monitoring, free of charge to PLWH in BC through a universal healthcare program (249).

4.3.2. Data collection instrument

To collect participant information on awareness, understanding, and perceived impacts of the 2012 SCC ruling on HIV non-disclosure, a novel supplementary data collection instrument was devised in collaboration with community and legal partners (**Appendix**

A). Questions were selected following a comprehensive literature review (159) and community consultation. Notably, the content and wording of the survey questions were community-driven. 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 available for participants who raised questions or concerns about the case law during administration of the supplement (85, 276).

4.3.3. Ethical Considerations

The ACCESS study and supplement were reviewed and approved by the University of British Columbia/Providence Healthcare Research Ethics Board. The cross-sectional supplement incorporating questions assessing awareness and perceived impacts of HIV non-disclosure case law was also approved by the Office of Research Ethics at Simon Fraser University. All ACCESS participants provided written informed consent to participate in the study and are compensated $30 for each study visit. No additional compensation was provided for completion of the supplement.

4.3.4. 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 on the criminalization of HIV non-disclosure.

4.3.5. Measures

Primary Outcome: 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 (159), including: age (per year increase); sex (male vs. female); self-reported Indigenous ancestry (Indigenous vs. non-Indigenous); injection drug use (yes vs. no); homeless, 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 Drug Treatment Program, we determined whether participants had achieved HIV viral load suppression (<50 copies/mL) in the most recent viral load 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 interpretation of the legal test presented in 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 of the legal obligation to disclose.

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 HIV non-disclosure case law. In each case, participants could indicate more than one response.

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, with more than one response option possible.

Experience and perceived impacts of HIV non-disclosure case law

To indicate experience of HIV non-disclosure criminalization, we measured the proportion of participants who knew someone who had been charged or threatened with a charge for HIV non-disclosure. We also determined whether participants knew someone who had chosen not to have sex with a new partner due to concerns about HIV disclosure and law. The perceived impact of 2012 SCC ruling on disclosure practices was measured by agreement with the statement "Revised HIV disclosure laws make PLWH more likely to disclose to new sexual partners." We measured the perceived impact of the ruling on interactions with healthcare providers by agreement with the statement: "Revised HIV disclosure laws might affect the type of information that PLWH would be willing to share with their healthcare provider, such as information about sexual activities and HIV disclosure." Responses were dichotomized as Strongly Agree/Agree vs. Strongly Disagree/Disagree/Neutral.

4.3.6. 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 χ-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. In cases 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; and for the variable "viral load suppression", missing values were imputed using self-reported viral load (n=3), or if unavailable (n=3), using the most prevalent response (277).

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 α<0.05. All statistical analyses were conducted using R version 3.1.0 (2014-04-10) "Spring Dance".

4.3.7. Subanalysis among female participants

Among female ACCESS participants only, bivariable analysis compared socio-demographic, behavioural, and clinical characteristics between participants who self-reported awareness of the 2012 SCC ruling versus participants who were not aware.

4.4. Results

Of the 462 ACCESS participants who completed a semi-annual study interview between June and December 2015, 249 (54%) completed the supplement assessing the awareness and perceived impacts of HIV non-disclosure case law, thus were included in the analytic sample. Participants included in the analytic sample had been followed in the ACCESS study for a median duration of 80 (IQR 61-109) months. Overall, 243 participants had at least 1 study follow-up visit in addition to their baseline interview. Among these participants, the median number of follow-up visits was 12 (IQR 8-15).

Within the analytic sample, 98 (39%) participants were female (**Table 4.1**). This was a criminalized group, with 92 (37%) participants ever experiencing incarceration, and 22 (9%) being either jacked-up by police or incarcerated in the six-month period before the interview. In the preceding six months, 137 (55%) participants had used

injection drugs, 244 (98%) had received ART, and 199 (80%) had achieved HIV viral load suppression (**Table 4.1**).

Of 106 (43%) participants reporting recent sex, 97 (92%) self-reported engaging in safer sex, either by achieving HIV viral load suppression and/or by consistently engaging in condom-protected sex. However, only 45 (42%) of participants who were recently sexually active self-reported engaging in condom-protected sex with a suppressed HIV viral load, and as such would not face a legal obligation to disclose based on the interpretation of the legal test for HIV non-disclosure presented in the 2012 SCC ruling.

4.4.1. Awareness and understanding of the 2012 SCC ruling

Overall, 112 (45%) participants self-reported awareness of the 2012 SCC ruling, with no difference in awareness by participant sex (p=0.778) (**Table 4.1**). Only 44 (18%) participants reported a complete understanding of the legal obligation to disclose (18% male vs. 17% female, p=0.914). In bivariable analysis, the proportion of participants who achieved HIV viral load suppression was lower among those who self-reported being aware of the SCC ruling compared to those who were not aware (74% vs. 85%, p=0.038) (**Table 4.1**). Among sexually active participants (n=106), the proportion who consistently engaged in condom-protected sex with a suppressed HIV viral load did not vary significantly between those who were aware vs. unaware of the ruling (39% vs. 46%, p=0.485). 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 viral load suppression (AOR: 0.51, 95% CI: 0.27-0.97) (**Table 4.2**).

4.4.2. 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 4.3**). While marginally non-significant, a larger proportion of female participants learned about the SCC ruling from ASOs compared to male participants (28% vs. 14%, p=0.082) (**Figure 4.1**). Among the 52 participants who learned about the ruling from newspapers/media, 33 (63%) reported having talked to no healthcare providers about the ruling.

Among participants aware of the ruling (n=112), 31 (28%) individuals reported that either their HIV physician and/or their 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 (44% female vs. 55% male, p=0.332) (**Table 4.3**). If we assume that participants who were not aware of the ruling had not talked to a healthcare provider about the HIV non-disclosure case law, then 78% of all participants within this analytic sample had not engaged in discussions about the 2012 SCC ruling with healthcare providers. Notably, among participants aware of the ruling, those 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 4.3**).

4.4.3. 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). No significant difference in satisfaction with HIV disclosure support services was observed between female and male participants (74% vs. 74%, p=0.979). Almost all participants (n=241, 97%) reported that they would feel comfortable talking to a healthcare provider about HIV disclosure and the law (**Table 4.4**). 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 4.4**).

4.4.4. Experience and perceived impacts of HIV non-disclosure case law

Overall, 24 (10%) participants knew someone who had been previously charged or threatened with a charge for HIV non-disclosure, with no significant difference observed between male and female participants (8% vs. 12%, p=0.250). Participants who were unaware of the 2012 SCC ruling but reported knowing someone who had been charged or threatened with a charge (n=9, 7%) likely represented those who were aware of HIV non-disclosure prosecutions, but were unaware of the current conditions under which PLWH could face charges (**Table 4.4**). Overall, 57 (23%) participants knew someone who had refused to have sex with a new partner due to concerns about HIV disclosure and the law, with no significant difference observed between male and female participants (21% vs. 27%, p=0.252). Just over half (n=138, 55%) of participants believed that the revised HIV non-disclosure case law made PLWH more likely to disclose to sexual partners. While marginally non-statistically significant, a higher proportion of male participants expressed this belief compared to females (60% vs. 49%, p=0.061).

Notably, 139 (56%) participants believed that the revised HIV non-disclosure case law might affect the type of information that PLWH would be willing to share with healthcare providers (**Table 4.4**). This belief was largely consistent across male and female participants (52% vs. 58%, p=0.586). When comparing participants who believed the revised laws might affect the type of information that PLWH would share with their healthcare providers to those who did not express this belief, the proportions of participants who reported being aware of the ruling (59% vs. 53%, p=0.254), who reported a complete understanding of the ruling (68% vs. 53%, p=0.137), who engaged in recent condomless sex (21% vs. 16%, p=0.647) or who achieved HIV viral load suppression (84% vs. 77%, p = 0.252), did not vary significantly between the two groups.

4.4.5. Subanalysis among female participants

Among 98 female participants in the analytic sample, 43 (44%) individuals were aware of the 2012 SCC ruling, and 17 (17%) reported a complete understanding of the legal obligation to disclose. Of the 51 (52%) female participants who were sexually active in the six months before study interview, the proportion that consistently engaged in condom-protected sex with a suppressed HIV viral load did not vary significantly between those who were aware compared to those unaware of the ruling (31% vs. 36%, p=0.692). Consistent with the main analysis, the proportion of female participants achieving HIV viral load suppression was lower among those who self-reported being aware of the 2012 SCC ruling compared to those unaware (65% vs. 82%, p=0.060), although this finding was marginally non-statistically significant in bivariable analysis (**Supplementary Table 4S1**).

4.5. Discussion

To our knowledge 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 among Canadian PLWH. Furthermore, this represents one of the few studies to assess awareness and perceived impacts of HIV non-disclosure criminalization among a highly marginalized and otherwise criminalized population. Within a community-recruited Canadian cohort of PLWH who use illicit drugs, we observed that less than half of participants were aware of the 2012 SCC ruling on HIV non-disclosure. Even among those who were aware, a minority had a complete understanding of the legal obligation to disclose. This work suggests that most PLWH in this marginalized and otherwise criminalized group lack critical information regarding the current legal obligation to disclose, which may put them at risk of further 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. Specifically, in qualitative interviews among 34 Canadian MSM in 2008, HIV-positive participants expressed confusion about the legal obligation to disclose following the SCC's 1998 ruling on HIV non-disclosure (278), a response that was similarly echoed in focus group discussions among PLWH in Ontario in 2010 (143). 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 (131), and more recently among women living with HIV in Vancouver (202), and Ontario (75, 229).

It is important to acknowledge that 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 (144, 146), PLWH (205) and the general Canadian population (193) 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 (279-282). Critically, however, previous work supports that most PLWH lack a complete understanding of the legal conditions under which a person living with HIV can face criminal charges (234, 279, 283, 284). 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 to optimise their health and rights.

In adjusted models, awareness of the 2012 SCC ruling was negatively associated with HIV viral load suppression. A similar trend towards a negative association between awareness of the 2012 SCC ruling and HIV viral load suppression was noted in a subanalysis among female participants only, although the association was not statistically significant. 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 (143, 144, 146). 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

(234). Similarly, a negative association between residence in jurisdictions with HIV criminal laws and ART adherence has been reported in the literature (235). In Canada, negative impacts of the criminalization of HIV non-disclosure on healthcare engagement may be augmented in the wake of the 2012 SCC ruling, given the identification of viral load as a key criterion of the interpretation of the legal test for HIV non-disclosure prosecutions, confirming the relevance of medical records to support legal testimony related to viral load (90).

The negative association between ruling awareness and HIV viral load suppression is a concern, given the vast differences in HIV transmission risk messaging promoted by criminal justice and public health systems (285). Combination HIV prevention approaches are built on robust empirical evidence that the likelihood of onward viral transmission approaches zero with achievement of HIV viral load suppression (14, 98, 268). Some commentaries suggest that achievement of viral load suppression represents a form of safer sex (285). However, viral load suppression alone may be insufficient to avert criminal liability for HIV non-disclosure in Canada (90). 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 (224). 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.

Previous Canadian work has identified sex-based differences in disclosure challenges and practices (130, 139), and suggested that women are more likely to face a legal obligation to disclose to sexual partners following the 2012 SCC ruling (161). However, while national survey data from a subset of Canadians in the general population in 2011 suggested poorer awareness of HIV non-disclosure prosecutions among women compared to men (232), we identified no sex-related differences in awareness of the 2012 SCC ruling in this cohort. Similarly, work conducted in the United States has identified no sex-related differences in HIV criminal law awareness (281). However, due to the overrepresentation of socio-economically marginalized individuals within our cohort, sex-related differences may be attenuated.

The majority of participants in this cohort reported a willingness to receive information about HIV disclosure and the law from healthcare providers. However, despite almost all participants demonstrating sustained 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 appeared 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 findings from a survey administered to 934 PLWH in Ontario between 2009-2010 (193) and interviews and focus groups with immigrant women living with HIV in Ontario (75). This is disconcerting, given the often inflammatory and sensationalist media reporting of HIV non-disclosure prosecutions (116, 120), which frequently misrepresent medico-legal information, and fuel HIV-related stigma and public misconceptions about HIV (49, 125, 193).

It is important to note that participants represented in the ACCESS cohort are historically harder to retain in healthcare services, and experience significant comorbidities and social challenges, including ongoing injection drug use, a high prevalence of hepatitis C co-infection and mental health concerns (286). As such, it is likely that management of acute health issues are prioritised over more distal concerns related to HIV disclosure and the law during consultations with healthcare providers. However, the lack of healthcare provider-led discussions around HIV disclosure and the law may also be a manifestation of provider uncertainty in the current legal climate. Previous qualitative work conducted both before (50, 143, 224) and after (226) 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 this topic to PLWH. Similarly, focus groups conducted among health and service providers working with PLWH in Ontario identified uncertainties regarding the roles and responsibilities of providers in the dissemination of legal information (224).

While advancing education about HIV disclosure and the law is a key priority within this cohort, it is important to acknowledge the legal and professional complexities

that may arise when healthcare providers adopt the responsibility of sharing legal information of this nature 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 (287-291), 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 healthcare providers working in this legal context (292).

The need for clear best-practice guidelines to inform a rights-based approach to healthcare and strengthen confidential patient-provider relationships in the current legal climate is critical, given that more than half of participants in this cohort expressed the belief that the revised HIV non-disclosure case law may impact the type of information PLWH would share with providers. Our findings echo previous Canadian work, showing that patient-provider trust may be compromised due to concerns about the exposure of confidential medical information (55, 144-146), suppressing discussions related to disclosure practices and sexual conduct in clinical settings (225). These observations augment wider concerns that increasingly strict legal decision-making from the SCC in relation to HIV non-disclosure compromises effective healthcare engagement of the most marginalized PLWH (159).

Participants appeared divided on the perceived impact of HIV non-disclosure case law on HIV disclosure to new sexual partners. We were unable to assess the association between personal HIV disclosure practices and ruling awareness, as data on disclosure practices are not collected within the ACCESS survey (a strategy enacted to protect the privacy and safety of research participants). However, previous work has identified limited effect of HIV criminal laws on disclosure practices of PLWH (280, 282), moreover there is a dearth of evidence to support that the act of HIV disclosure is associated with safer sexual conduct (244).

Previous work has shown that the existence of HIV criminal laws is not associated with the adoption of safer sex behaviours (33, 34, 280, 282, 293), challenging claims that the criminalization of HIV non-disclosure is an effective structural-level method of HIV prevention. While our data did not facilitate assessment of an association between general awareness of HIV non-disclosure prosecutions and sexual behaviours, we observed a positive association between awareness of the 2012 SCC ruling and engagement in condomless sex compared to no sex. Further, in bivariable analysis restricted to sexually active participants, we observed no association between awareness of the ruling and engagement in condom-protected sex in the presence of a suppressed viral load, suggesting that awareness of the 2012 SCC ruling was not associated with adoption of safer sex practices in this cohort.

It is important to acknowledge the high prevalence of sexual inactivity within 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 participants. 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 (194), other work has shown that concerns about HIV criminal laws persist despite sexual conduct or disclosure practices (143), driven by the fear of false accusations from previous partners and shifted burden of proof to the partner living with HIV in criminal trials (194). 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 (50, 143, 283, 294). Although this has not been previously examined among PLWH who use illicit drugs to our knowledge, almost a quarter of participants in this sample reported knowing someone who had refused sex due to concerns about disclosure and the law. However, our findings did not provide evidence in support of a positive association between awareness of the 2012 SCC ruling and sexual inactivity.

4.5.1. Limitations

Readers should be aware that participants completing the supplemental survey assessing awareness and perceived impacts of HIV non-disclosure case law were those

who remained under active follow-up in the ACCESS cohort. The supplemental survey was completed by a subset of the 462 participants who presented for semi-annual study follow-up between June and December 2015. On comparing key socio-demographic, clinical and behavioural characteristics between participants presenting for semi-annual study follow-up during this period who were included in this analytic sample versus those who were not, the two groups only differed by participant sex, with female participants more likely to be represented in this analytic sample (**Supplemental Table 4S2**).

Many variables included in this analysis were self-reported, including our primary outcome, thus may be subject to recall bias and social desirability reporting bias. However, we worked closely with front line staff administering the survey to ensure that they understood the ruling, and staff received training in strategies to minimize 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. Sexual partner HIV serostatus is not routinely collected within ACCESS, and as such we were unable to ascertain the impact of this variable on ruling awareness.

Finally, questions assessing the impact of HIV non-disclosure case law were deliberately posed hypothetically. While this limited our ability to assess direct impacts of HIV non-disclosure case law on behaviours, it increased our analytic power by enabling questions on the impacts of HIV non-disclosure case law to be posed to participants who were previously unaware of the ruling before completing this supplement. Furthermore, following community consultation, the hypothetical wording of questions was identified as a strategy to enhance participant comfort and safety, and encourage honest and open responses to survey questions.

4.5.2. Conclusion

In conclusion, we identified a critical need for dissemination of clear and accurate information about the current legal obligation to disclose HIV status to sexual partners among members of a marginalized and otherwise criminalized cohort of PLWH who use illicit drugs. Despite the majority of participants being optimally engaged in HIV treatment

and care, poor awareness of the legal obligations to disclose may put them at risk of prosecution, which may compromise future health outcomes (36). This analysis contributes key evidence of the negative impact of HIV non-disclosure case law on effective healthcare engagement among members of marginalized communities, who have previously been underrepresented in this field of research.

As it appears likely that HIV non-disclosure prosecutions will continue, 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 HIV 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, to guide information sharing around HIV disclosure and the law, and to mitigate the harmful effects of HIV non-disclosure criminalization on healthcare provision. Guidelines should be informed by international position statements (295) and recommendations published by community, clinical and non-government organizations (43, 287, 289, 290), and strengthened through collaboration with legal agencies.

Table 4-1 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 (52)	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 (5)	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)	

	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**
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)	
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 (2)	2 (2)	3 (2)	
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 4-2. 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 4-3. 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 (5)	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 (2)	

[+]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 4-4. 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 (52)	<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 (0)	8 (6)	0.009

	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**
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 (0)	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)	
Don't know	6 (2)	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 (0)	0 (0)	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.

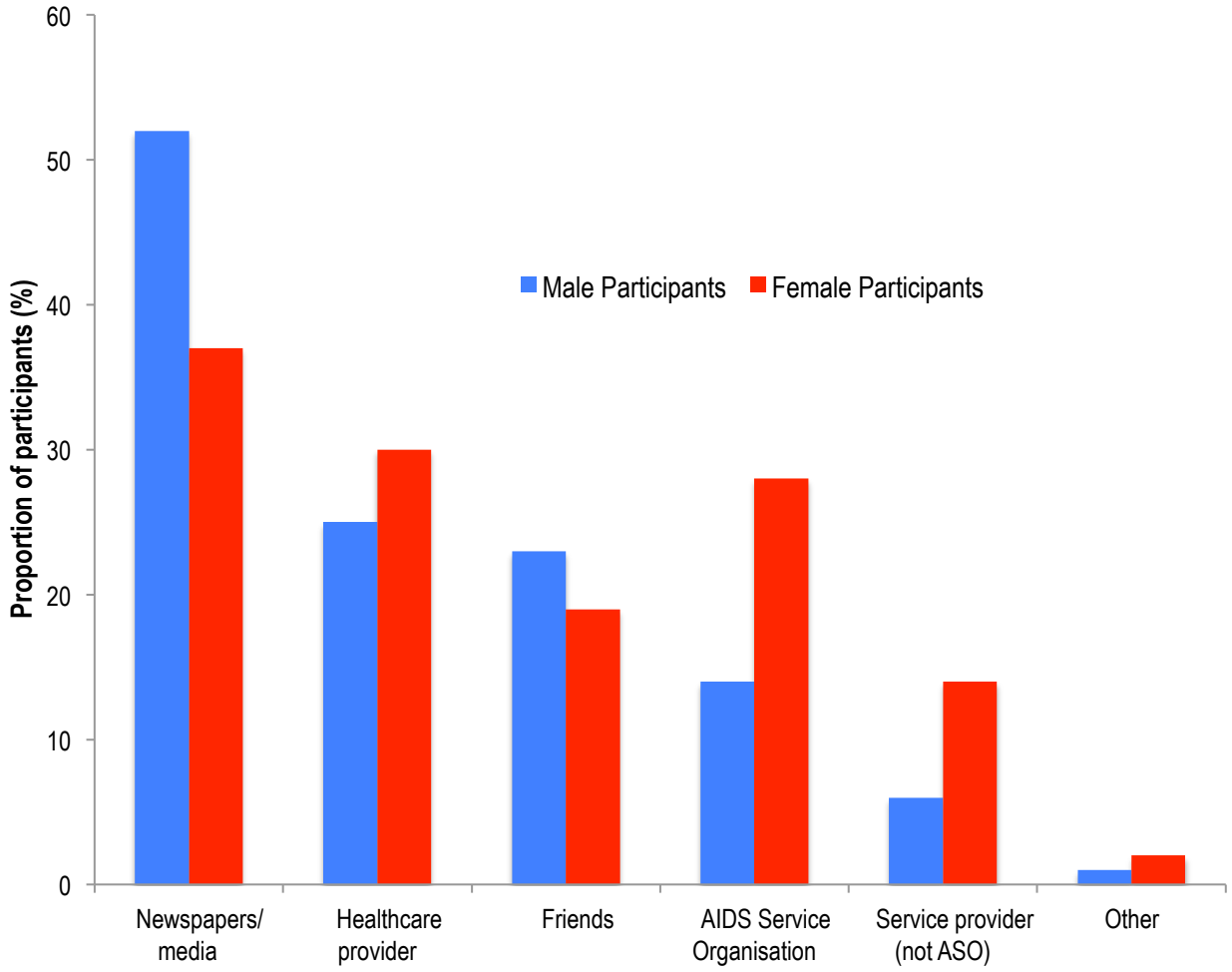


Figure 4-1. Sources from which participants self-reporting ruling awareness learned about 2012 SCC ruling, stratified by sex (n=112)

4.5.3. Supplementary tables

Table 4S1: Socio-demographic and clinical characteristics of women living with HIV who use illicit drugs, stratified by self-reported awareness of the 2012 SCC ruling on HIV non-disclosure (n=98).

	All female participants (n=98, 100%)	Female participants aware of the ruling (n=43, 44%)	Female participants not aware of the ruling (n=55, 56%)	
Variable	**Median [IQR] or n (%)**			**P value**
Age (in years)	47 (40, 53)	46 (37, 53)	48 (42, 54)	0.209
Indigenous ancestry				0.695
Yes	64 (65)	29 (67)	35 (64)	
No	34 (35)	14 (33)	20 (36)	
Heterosexual				0.771
Yes	81 (83)	35 (81)	46 (84)	
No	17 (17)	8 (19)	9 (16)	
Homeless				0.462
Yes	7 (7)	2 (5)	5 (9)	
No	91 (93)	41 (95)	50 (91)	
Education level ≥ high school				0.997
Yes	41 (42)	18 (42)	23 (42)	
No	57 (58)	25 (58)	32 (58)	
Jacked up by police in L6M				0.692
Yes	6 (6)	2 (5)	4 (7)	
No	92 (94)	41 (95)	51 (93)	
Incarcerated in L6M				0.190
Yes	2 (2)	2 (5)	0 (0)	
No	96 (98)	41 (95)	55 (100)	

	All female participants (n=98, 100%)	Female participants aware of the ruling (n=43, 44%)	Female participants not aware of the ruling (n=55, 56%)	
Variable	**Median [IQR] or n (%)**			**P value**
Injection drug use in L6M				0.748
Yes	61 (62)	26 (60)	35 (64)	
No	37 (38)	17 (40)	20 (36)	
Experienced violence in L6M				1.000
Yes	10 (10)	4 (9)	6 (11)	
No	88 (90)	39 (91)	49 (89)	
Sex work in L6M				0.547
Yes	21 (21)	8 (19)	13 (24)	
No	77 (79)	35 (81)	42 (76)	
Sex in L6M				0.333
No sex	47 (48)	17 (40)	30 (56)	
Condom protected sex	25 (26)	13 (30)	12 (22)	
Condomless sex	26 (26)	13 (30)	13 (24)	
In a relationship				0.165
Yes	38 (39)	20 (47)	18 (33)	
No	60 (61)	23 (53)	37 (67)	
Years living with HIV	15 (10, 19)	15 (11, 20)	14 (10, 19)	0.503
ART in L6M				1.000
Yes	95 (97)	42 (98)	53 (96)	
No	3 (3)	1 (2)	2 (4)	
Viral suppression (<50 copies/mL)				0.060
Yes	73 (74)	28 (65)	45 (82)	
No	25 (26)	15 (35)	10 (18)	

Percentage totals may exceed 100% due to rounding.
L6M: in the six month period before study interview

Table 4S2: Socio-demographic and clinical characteristics of ACCESS participants who presented for study interview during the semi-annual round of follow-up during which the criminalization supplement was administered, stratified by inclusion in the analytic sample (n=462).

	Participants included in the analytic sample (n=249, 54%)	Participants not included in the analytic sample, (n=213, 46%)	
Variable	**Median [IQR] or n (%)**		**P value**
Age (in years)	50 (44, 55)	50 (43, 55)	0.644
Indigenous ancestry			0.201
Yes	120 (48)	90 (42)	
No	129 (52)	123 (58)	
Sex			0.012
Female	98 (39)	60 (28)	
Male	151 (61)	153 (72)	
Homeless			0.393
Yes	20 (8)	22 (10)	
No	229 (92)	191 (90)	
Education level ≥ high school			0.542
Yes	111 (45)	101 (47)	
No	138 (55)	112 (53)	
Incarcerated in L6M			0.886
Yes	10 (4)	8 (4)	
No	239 (96)	205 (96)	
Injection drug use in L6M			0.747
Yes	137 (55)	114 (54)	
No	112 (45)	99 (46)	
Sex work in L6M			0.533
Yes	24 (10)	17 (8)	
No	225 (90)	196 (92)	
Sex in L6M			

	Participants included in the analytic sample (n=249, 54%)	Participants not included in the analytic sample, (n=213, 46%)	
Variable	**Median [IQR] or n (%)**		**P value**
No sex	143 (57)	129 (61)	
Condom protected sex	57 (23)	37 (17)	0.177
Condomless sex	49 (20)	47 (22)	0.796
Years living with HIV	15 (10, 20)	14 (10, 19)	0.901
Viral suppression (<50 copies/mL)			0.378
Yes	199 (80)	163 (77)	
No	50 (20)	50 (24)	

Percentage totals may exceed 100% due to rounding.
L6M: in the six months before study interview

Chapter 5. Awareness, understanding, and perceived healthcare impacts of HIV non-disclosure case law among women living with HIV in Canada

5.1. Abstract

Background: In 2012, the Supreme Court of Canada (SCC) ruled that people living with HIV have a legal obligation to disclose their serostatus to partners before sex that poses a "realistic possibility" of HIV transmission, and suggested that condom-protected vaginal sex with a low viral load (<1500 copies/mL) would incur no legal obligation to disclose. Awareness and perceived healthcare impacts of this ruling remain undefined among women living with HIV (WLWH), who face gendered barriers to HIV disclosure and healthcare engagement.

Methods: Participants in the CHIWOS study completed a Peer Research Associate-administered survey between June 2015 and January 2016, in which awareness and understanding of the 2012 SCC ruling, existing and preferred sources of information about HIV disclosure and the law, and perceived impacts of HIV non-disclosure case law on effective healthcare engagement were assessed. Multivariable logistic regression identified correlates of self-reported awareness of the 2012 SC ruling.

Results: Of 1425 CHIWOS participants, 584 (41%) participants completed the wave 2 survey and answered questions on the criminalization of HIV non-disclosure between June 2015 and January 2016, thus were included in the analytic sample. Among the 584 women included in this analysis, median participant age was 45 years (IQR: 37-52), and 85% were receiving antiretroviral therapy (ART). Overall, 431 (74%) participants were

aware of the ruling, while 204 (35%) demonstrated a complete understanding of the legal obligation to disclose. Among participants aware of the ruling (n=431), 36% reported that they had not engaged in discussions about HIV disclosure and the law with any healthcare providers. Among all participants (n=584), regular HIV physicians (61%), peer workers (25%), and community workers (25%) were most commonly identified as preferred providers with whom to discuss HIV disclosure and the law. Most (65%) participants believed that HIV non-disclosure case law might affect the type of information WLWH would share with providers. Participation in community HIV work (AOR: 1.74, 95% CI: 1.10-2.76) was positively associated with ruling awareness, whereas experience of violence as an adult (AOR: 0.39, 95% CI: 0.21-0.70), self-reporting a detectable/unknown HIV viral load (AOR: 0.52, 95% CI: 0.30-0.90) and self-reporting lack of awareness of HIV prevention benefits of ART (AOR: 0.59, 95% CI: 0.38-0.91) were negatively associated with awareness.

Conclusions: Vulnerable WLWH who demonstrate suboptimal engagement with HIV care and community work lack awareness of the 2012 SCC ruling on HIV non-disclosure. Dissemination of information about HIV disclosure and the law in community and healthcare settings is warranted to support informed sexual decision-making to avoid prosecution, and to optimise health and rights of WLWH in the current legal climate.

5.2. Introduction

Access to antiretroviral therapy (ART) has transformed the clinical prognosis and reproductive opportunities available to women living with HIV (WLWH) (9, 18, 98, 296, 297). However, pervasive HIV-related stigma and discrimination, rooted in misconceptions about HIV, remain considerable barriers to effective engagement with healthcare services, and to women's health and wellbeing (26, 44, 60, 298-300). The use of the criminal law against people living with HIV (PLWH) is both a symptom of and a contributor to continued HIV-related stigma globally (30, 165), with at least 49 countries having prosecuted PLWH for HIV non-disclosure, exposure or transmission (242).

Reducing barriers to engagement with healthcare services is a global public health priority and is recognized within the literature as a key evidenced-based strategy to reduce HIV incidence (2). Although the use of criminal law against PLWH originated, in part, as a structural attempt to curtail the rising incidence of HIV infections, previous work fails to support the use of punitive laws as an effective HIV prevention strategy (41, 159). In fact, the use of criminal laws against PLWH has been shown to create structural barriers to engagement with HIV testing, treatment, and care services, driven by concerns about the exposure of confidential medical information and the exacerbation of HIV-related stigma (41, 42, 143, 159).

Applying a critical feminist lens to discussions around the criminalization of HIV non-disclosure is vital to fully appreciate intersecting vectors of oppression experienced by WLWH, and to recognise the role of social identities and inequities in shaping women's health and lives in the current legal climate (60, 79, 141). Women experience gendered barriers to and consequences of HIV serostatus disclosure to sexual partners, including higher rates of violence, dissolution of partnerships, stigma and social isolation (70, 71, 109, 257). Marginalized and vulnerable WLWH are disproportionately burdened by challenges to safe HIV disclosure, particularly those who engage in survival sex work, or who use illicit drugs (71, 109, 139). WLWH may be uniquely affected by navigating healthcare engagement in an environment shaped by the criminalization of HIV non-disclosure (75, 140, 159), due to women-centred sexual, reproductive and maternal

health needs (74, 301-304), and gendered barriers to healthcare engagement (305-307). Previous work has identified gender inequalities across the cascade of HIV care (82, 134), including delayed initiation of ART (135, 138), poorer quality of initial care (186), poorer adherence to ART (188, 189) and increased treatment interruptions (187), resulting in poorer clinical outcomes among WLWH compared to men (8, 9, 137, 190). The use of the criminal law against PLWH may augment barriers to engagement with HIV care, perpetuate gendered inequalities in health outcomes, and further isolate the most marginalized and vulnerable WLWH from healthcare services (113, 159).

Globally, Canada has the second largest number of absolute convictions of PLWH (28), and has previously used the criminal law to prosecute a mother living with HIV who transmitted HIV to her child (231). At the time of writing, 181 PLWH have faced criminal charges for HIV non-disclosure (41), including 17 women. As no HIV-specific laws exist within the Criminal Code of Canada, the criminal justice system applies existing criminal laws to prosecute HIV non-disclosure cases, guided by legal precedents set by the Supreme Court of Canada (SCC) (85). Prosecutors use sexual assault law in most cases of HIV non-disclosure, based on the interpretation that HIV non-disclosure represents fraud that vitiates consent that was given to a sexual encounter (85). A conviction for aggravated sexual assault can result in a maximum life sentence and mandatory registration as a sex offender. The application of sexual assault law for cases of HIV non-disclosure has been criticized by feminist legal scholars, who argue that this legal approach is a misuse of consent law that was the result of a radical human rights movement from within the feminist community to protect women's sexual autonomy, and undermines the gravity of sexual assault charges (95, 109).

In October 2012 the SCC established a new legal test for Canadian HIV non-disclosure prosecutions after ruling that PLWH who engage in sex that poses a "realistic possibility" of HIV transmission without first disclosing their HIV status can face criminal charges. In clarifying that condom-protected vaginal sex in the presence of a low viral load (<1500 copies/mL) would avert the legal obligation to disclose, the SCC increased the reach of criminal liability for HIV non-disclosure past that which was previously established by an SCC ruling in 1998 (97), and failed to incorporate modern evidence-based science of HIV transmission risk associated with ART (10, 14, 98, 268). Although

there may be some variation in the interpretation of this legal test within the lower courts (243), it is critical for WLWH to assume the strictest interpretation in order to protect themselves from prosecution.

Legal scholars have cautioned that the revised legal test for Canadian HIV non-disclosure prosecutions may disproportionately impact WLWH, due to gendered barriers to condom use negotiation and inequities in healthcare outcomes (99, 308); a concern that has since been reinforced by empirical evidence among a community-recruited cohort of PLWH who use injection drugs in Vancouver (161). However, awareness and understanding of the legal obligation to disclose remains uncharacterised across the diverse and intersecting identities of Canadian WLWH in the wake of the 2012 SCC ruling. Canadian clinicians, public health experts and human rights activists have expressed concern related to the negative impacts of HIV non-disclosure on the health and rights of WLWH (43, 99, 127, 128, 266, 274, 309-311), however the voices of WLWH across Canada remain notable in their absence from this conversation. There is a critical need for community-collaborative, women-centered research to evaluate how living under the threat of HIV non-disclosure prosecution shapes women's engagement with healthcare services.

In a community-based cohort study developed by, with, and for WLWH in three Canadian provinces, we measured prevalence and correlates of awareness and understanding of the 2012 SCC ruling on HIV non-disclosure, to ascertain whether WLWH are equipped with fundamental information to support informed sexual decision-making to avoid prosecution. We also sought to determine the existing and preferred role of healthcare providers in conversations with WLWH around HIV disclosure and the law, in order to inform future interventions to support WLWH in the current legal climate. Finally, we evaluated the perceived impact of HIV non-disclosure case law on the healthcare engagement of WLWH.

5.3. Methods

5.3.1. Study setting

The Public Health Agency of Canada estimates that there are currently 16,880 WLWH in Canada (84), with British Columbia (BC), Ontario and Quebec representing the three provinces comprising the majority (81%) of WLWH nationally (100). There is notable variation in the socio-demographic characteristics of WLWH within these three provinces. The regional HIV epidemics in Ontario and Quebec comprise a large prevalence of immigrant, refugee and African, Caribbean and Black (ACB) women, whereas in BC, Indigenous people and women who have used injection drugs are overrepresented among WLWH (100). Despite these regional differences, what is consistently observed is that socio-economically marginalized women are disproportionately burdened with HIV nationally, with many women experiencing intersecting identities that shape experiences of stigma and barriers to healthcare engagement (79, 100).

5.3.2. Data source

We used cross-sectional survey data from the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS), a community-based longitudinal cohort study of WLWH from BC, Ontario and Quebec, described in detail within the CHIWOS cohort profile (158). CHIWOS was initiated in 2011 to gain a greater understanding of the barriers to and facilitators of accessing women-centred HIV care for WLWH across Canada, and to explore the mental, sexual and reproductive health benefits of this healthcare approach.

Grounded in the principles of critical feminist theory (141) and community-based research (CBR), CHIWOS involves WLWH and allied clinicians, researchers, and community members as core partners throughout all stages of the research. Peer Research Associates (PRAs; i.e., WLWH who receive research training (147)) are involved in the development of data collection tools, lead participant outreach and recruitment efforts, and administer questionnaires to participants.

Between August 27, 2013 and March 13, 2015, 1,425 WLWH were enrolled in CHIWOS. Women eligible for CHIWOS recruitment were older than 16 years of age, self-identified as a woman living with HIV (trans-inclusive), and were resident in one of the three study provinces. Particular efforts were made to recruit women from marginalized and vulnerable populations, who are disproportionately affected by HIV in Canada or underserved by health services, including sex workers, trans-women, immigrant women, Indigenous women, women who use injection drugs, and ethno-racial populations.

At baseline, CHIWOS participants completed a PRA-administered survey of 90 minutes duration, which elicited information on reproductive, sexual, mental and women's health outcomes, in addition to use of HIV services. The survey was administered in English or French using Fluidsurveys, an online survey instrument (supported by White Label FluidSurveys^{TM} software), at collaborating HIV clinics, community-based AIDS Service Organizations (ASOs), or other community organizations. For participants located in rural or remote regions, the survey was administered via telephone or over Skype. Participants were invited to complete a follow-up (wave 2) survey approximately 18 months after their baseline interview. The wave 2 survey was constructed to incorporate longitudinal evaluation of baseline study variables and to explore novel priority research topics identified through community consultation.

Data collection on the criminalization of HIV non-disclosure

Following administration of the baseline CHIWOS questionnaire, participants, PRAs and the CHIWOS Community Advisory Board independently identified the criminalization of HIV non-disclosure as a key concern for Canadian WLWH, and a critical research priority for the CHIWOS team moving forward. Novel research questions were designed for integration into the existing infrastructure of the CHIWOS wave 2 survey. A multidisciplinary team of experts contributed to the development of the questions, including academic researchers, frontline research staff, members of the CHIWOS peer network, and a legal representative. Question development was informed by a comprehensive literature review (159) and community consultation, to ensure that

questions reflected priority concerns of Canadian WLWH, and contributed evidence to key knowledge gaps in the literature.

Structured questions assessing awareness, understanding, existing and preferred sources of information, and perceived healthcare impacts of HIV non-disclosure case law were included in the CHIWOS wave 2 data collection instrument (**Appendix B**). In some instances, questions were posed hypothetically to encourage open and honest responses from participants, to ensure questions did not compromise participant safety or comfort, and to enable participants who had no previous knowledge of the law to answer questions relating to potential impacts of the case law.

The data collection instrument was comprehensively reviewed prior to survey administration, to verify that priority questions for WLWH in the wider community were addressed, and to ensure that questions would not threaten the health, rights or safety of participants. Proposed questions were piloted with the CHIWOS PRAs to isolate problems with validity, clarity, and inclusiveness of response options. CHIWOS PRAs underwent training on the criminalization of HIV non-disclosure in Canada to support their own understanding of the case law, and to clarify the importance of protecting the privacy of participants when conducting research of this nature. Referral services and information on HIV disclosure and the law were available for participants who raised questions or concerns about the case law during administration of the survey (85, 276, 312, 313).

5.3.3. Ethical considerations

Ethical approval for study procedures was granted by the Research Ethics Boards of Simon Fraser University, University of British Columbia/Providence Health, Women's College Hospital, and McGill University Health Centre. Participants provided voluntary written informed consent to participate at study enrolment (or verbal consent in the presence of a witness from the study team for surveys completed over the telephone or Skype). Participants were provided with a $50 honorarium for the completion of each baseline or follow-up survey.

5.3.4. Inclusion criteria

In this analysis, we included women who had completed the CHIWOS wave 2 survey between 26 June 2015 and 26 January 2016. This timeline restriction was applied in light of the critical need to urgently contribute evidence to this priority research question. Participants who reported that they would prefer not to answer questions on the criminalization of HIV non-disclosure were excluded from the analysis (n=1).

5.3.5. Measures

Primary outcome: Awareness of 2012 SCC ruling

The primary outcome of interest was self-reported awareness of the 2012 SCC ruling on HIV non-disclosure, measured 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.

Correlates of awareness of the 2012 SCC ruling on HIV non-disclosure were identified based on a comprehensive literature review (159). Socio-demographic variables that were considered included age at interview, province of interview (Ontario vs. BC vs. Quebec), ethnicity (Caucasian/White vs. African, Caribbean or Black (ACB) vs. Indigenous vs. other ethnicity); years living in Canada (born in Canada vs. <10 years vs. ≥10 years); sexual orientation (heterosexual vs. LGBTTQ); education (≤high school vs. > high school); employed at interview (yes vs. no), unstable housing at interview (defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room occupancy hotel) (yes vs. no); history of incarceration (yes vs. no); incarceration since last study interview (yes vs. no); history of injection drug use (yes vs. no); and injection drug use in the six months before study interview (yes vs. no). HIV-related stigma was measured using the 10-item HIV Stigma Scale (HSS) (314, 315), with scores ranging from 0-100. Scores equalling or exceeding the median were categorized as high vs. low HIV-related stigma. Violence experienced as an adult was defined as reporting verbal, physical, controlling and/or sexual abuse (yes vs. no).

Engagement with the HIV community was measured by self-reported participation in HIV work in the community since the last interview (yes vs. no).

HIV clinical variables that were considered included years living with HIV (<6 years vs. 6-14 years vs. >14 years); self-reported achievement of undetectable HIV viral load (<50 copies/mL) at interview (previously shown to have a high positive predictive value (316)) (yes. vs. no/unknown viral load); awareness of the prevention benefits of ART (defined as self-reported belief that ART makes the risk of HIV transmission a lot lower) (yes vs. no); and receipt of HIV medical care since last CHIWOS interview (yes vs. no). Sexual health variables that were considered included sexual activity in the six-month period before interview (defined as no consensual sex vs. consensual sex with 100% condom use vs. consensual sex with <100% condom use); being in a relationship (married/common law partnership/in a relationship) (yes vs. no); serostatus of sexual partners in the six months before interview (defined as no consensual sexual partners vs. all sexual partners HIV positive vs. at least one HIV negative or unknown status partner); number of consensual sexual partners in the six months before interview (0 vs. 1 vs. >1); sex work in the six months before interview (exchanged sex for money, drugs, clothing, possessions) (yes vs. no) and receipt of testing for sexually transmitted infection (STI: chlamydia, gonorrhoea or syphilis) in the year before interview (yes vs. no).

Understanding of the legal obligation to disclose

After assessing self-reported awareness of the 2012 SCC ruling, a concise definition of the conditions under which PLWH would face no legal obligation to disclose, as suggested in the 2012 SCC ruling, was reviewed with all participants (**Appendix B**). Among those who self-reported awareness of the ruling, we determined consistency of participant understanding of the legal obligation to disclose with the definition of the case law provided, based on their response to the question “How similar is this definition to what you had previously understood about the laws relating to HIV disclosure?” Responses were dichotomized as “the same” vs. “mostly the same/mostly different/completely different”. Participants responding that the definition provided was

the same as what they had previously understood were considered to demonstrate a complete understanding.

Existing and preferred sources of information

Among participants self-reporting awareness of the 2012 SCC ruling, we identifed sources from which individuals learned about HIV disclosure and the law (healthcare providers; ASOs; service providers (not ASOs); newspapers/media; friends; PRAs; Canadian HIV/AIDS Legal Network; other). Participants could select more than one response option. For each source of information reported, we determined the proportion of participants who demonstrated a complete understanding of the legal obligation to disclose, as a basic indicator of the quality of information received. Participants were also asked to specify which healthcare providers (e.g., HIV physician, general practitioner (GP), nursing staff, counsellor, social worker, peer worker, other), if any, had talked to them about HIV disclosure and the law. Participants could report more than one provider. The perceived degree of importance of HIV healthcare provider-led discussions around HIV disclosure and the law was assessed across three levels: very important, a little important or not important. Finally, participants were asked to identify one or more healthcare provider(s) with whom they would feel comfortable talking to about HIV disclosure and the law.

Experience of the criminalization of HIV non-disclosure

As an indicator of experience of HIV non-disclosure criminalization, we measured the proportion of participants who knew someone who had been charged or threatened with a charge for HIV non-disclosure.

Disclosure in the climate of HIV non-disclosure criminalization

Barriers to and challenges of HIV disclosure in the current legal context were assessed among participants. Specifically, we measured fear of HIV disclosure by participant

response to the statement “I have been afraid to tell other people I have HIV”. Fear of losing access to health services following disclosure of HIV status was measured by response to the statement “ I have been worried that I’ll lose access to health services or care if people find out I have HIV”. Additionally, we assessed satisfaction with HIV disclosure support services 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 WLWH navigate HIV disclosure to sexual partners”. In each case, responses were dichotomized as agree/strongly agree vs. neither agree/disagree/disagree/strongly disagree.

Healthcare engagement in the climate of HIV non-disclosure criminalization

To characterize patient-provider relationships in the current legal climate, we asked participants whether or not they trusted healthcare professionals at the HIV clinic that they had attended during the year before study interview, and whether they perceived this HIV clinic to be a place where their information is kept confidential. Responses were dichotomised as agree/strongly agree vs. neither agree/disagree/disagree/strongly disagree. We assessed the perceived importance of HIV healthcare provider-led discussions in the healthcare setting to promote understanding of individual rights to confidentiality, respect and quality care. Responses were assessed across three levels: very important, a little important or not important. Finally, we assessed the perceived impact of HIV non-disclosure case law on consultations with healthcare providers by measuring agreement with the statement: “HIV disclosure laws might affect the type of information that WLWH would be willing to share with their healthcare provider, such as information about sexual activities and HIV disclosure”. Again, responses were dichotomised as agree/strongly agree vs. neither agree/disagree/disagree/strongly disagree.

5.3.6. Statistical Analysis

Variable distributions were characterized using descriptive statistics (median and interquartile range [IQR] for continuous variables and n [%] for categorical variables). Socio-demographic, sexual health, and HIV clinical characteristics were compared between participants who self-reported awareness of the 2012 SCC ruling and those who did not, using Pearson's χ-squared test (or the Fisher's exact test when the count was <5) for categorical variables, and the Wilcoxon rank sum test for continuous variables. Multivariable logistic regression was used to identify independent correlates of awareness of the 2012 SCC 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. In cases where two variables were collinear, such as self-reported undetectable HIV viral load and receipt of ART, the variable that was considered to have the most relevance to the research question was prioritized for model selection. If, during the model selection process, an explanatory variable had missing data, responses were imputed based on information captured within the wave 1 survey to preserve statistical power. If this strategy was not possible, participants were excluded from model selection. After 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 analyses were conducted using SAS 9.4 software (SAS Institute Inc., Cary, NC).

5.3.7. Sensitivity analysis

We assessed prevalence and correlates of 2012 SCC ruling awareness using a revised definition of this primary outcome variable, which also considered whether or not participants had a complete understanding of the current legal obligation to disclose. In this revised definition, participants who both reported awareness of the ruling and who demonstrated a complete understanding of the legal obligation to disclose were considered to be aware of the ruling.

5.4. Results

Of 1,425 participants enrolled in CHIWOS, 585 participants had completed the wave 2 survey by January 2016. We excluded 1 participant who had completed the wave 2 survey but preferred not to answer questions on the criminalization of HIV non-disclosure, which left a final analytic sample of 584 (41%) CHIWOS participants. Our analytic sample reflected the socio-demographic diversity of Canadian WLWH (**Table 5.1**). The median age of participants was 45 years (IQR: 37-52), and 83 (14%) participants identified as LGBTTQ. In terms of ethnicity, 138 (24%) participants self-identified as Indigenous, 169 (29%) as ACB, and 236 (40%) as Caucasian. Overall, 497 (85%) participants were receiving ART, and 490 (84%) participants self-reported an undetectable HIV plasma viral load at interview. Among 247 (42%) participants who reported consensual sex in the six months before the interview, 227 (92%) practiced safer sex either by consistently practicing condom-protected sex or by self reporting an undetectable HIV viral load, however only 92 (37%) both self-reported an undetectable HIV viral load and consistently engaged in condom-protected sex.

5.4.1. Awareness and understanding of the 2012 SCC ruling

Overall, 431 (74%) women self-reported being aware of the 2012 SCC ruling. However, only 204 (35%) participants reported a complete understanding of the legal obligation to disclose to sexual partners. Among 247 (42%) participants who reported recent consensual sex, the proportion of participants both self-reporting an undetectable HIV viral load and consistently engaging in condom protected sex did not vary by ruling awareness (38% vs. 35%, p=0.764). In bivariable analysis, women self-reporting awareness of the 2012 SCC ruling were more likely to be older at interview, to have completed education beyond high-school, to have participated in HIV work in the community since their last CHIWOS interview, to report low HIV-related stigma, to have received HIV care since their last interview, to be on ART, to self-report achieving an undetectable HIV viral load, to be aware of the prevention benefits of ART and to report receiving care from their HIV doctor for a longer time period. Additionally, participants self-reporting awareness of the ruling were less likely to live in unstable housing or to have used injection drugs in the six months before interview (**Table 5.1**).

In adjusted analyses, participation in HIV work in the community since last interview (AOR: 1.74, 95% CI: 1.10-2.76) and residence in BC vs. Ontario (AOR: 1.94, 95% CI: 1.10-3.40) were positively associated with awareness of the 2012 SCC ruling. Experience of violence as an adult (AOR: 0.39, 95% CI: 0.21-0.70), having a detectable or unknown HIV viral load (AOR: 0.52, 95% CI: 0.30-0.90) and reporting a lack of awareness of the prevention benefits of ART (AOR: 0.59, 95% CI: 0.38-0.91) were negatively associated with awareness of the ruling (**Table 5.2**).

5.4.2. Sources from which participants learned about HIV disclosure and the law

Among participants who reported that they were aware of the 2012 SCC ruling (n=431), the most common sources from which individuals learned about HIV disclosure and the law were ASOs (59%), newspapers/media (35%), friends/peers (34%), healthcare providers (27%), and the Canadian HIV/AIDS Legal Network (25%) (**Table 5.3**), with some variation by province of interview (**Figure 5.1**). Among participants who reported learning about HIV disclosure and the law from healthcare providers (n=115), HIV physicians were the most frequently reported provider to whom participants had talked about the law (69%). Compared to participants with an incomplete understanding of the legal obligation to disclose, participants reporting a complete understanding were significantly more likely to report learning about HIV disclosure and the law from healthcare providers (27% vs. 22%, p=0.037) or the Canadian HIV/AIDS Legal Network (25% vs. 21%, p=0.048), (**Table 5.3)**.

5.4.3. Healthcare providers women talked to about HIV disclosure and the law

Among participants aware of the 2012 SCC ruling (n=431), 269 (62%) reported that they had talked to at least one type of healthcare provider about HIV disclosure and the law, with HIV physicians (38%), community workers (19%), GPs (13%) and peer workers (12%) the most commonly identified type of provider. Among those aware of the ruling, participants who reported that they had not talked to any healthcare provider about HIV disclosure and the law (n=156, 36%) were significantly more likely to be represented among those reporting an incomplete vs. complete understanding of the legal obligation

to disclose (43% vs. 28%, p=0.001). If we assume that participants who were not aware of the ruling had not engaged in discussions about the revised HIV non-disclosure case law with healthcare providers, then a minority (46%) of participants in this analytic sample had talked to a healthcare provider about this ruling.

Among all participants (n=584), a substantial majority (n=488, 84%) believed that it was very important for HIV physicians to discuss issues around the criminalization of HIV non-disclosure in the healthcare setting, an observation that remained consistent regardless of whether or not participants were aware of the 2012 SCC ruling (83% vs. 84%, p=0.423) (**Table 5.4**). Regular HIV physician was identified by a majority (n=358, 61%) of women as the type of healthcare provider they would prefer to approach with concerns around HIV disclosure and the law, followed by peer workers (n=145, 25%), community workers (n=145, 25%), social workers (n=142, 24%) and regular GP (n=133, 23%). Only 30 (5%) participants reported that they would not feel comfortable discussing issues around HIV disclosure and the law with any healthcare provider (**Figure 5.2**).

5.4.4. Experiences of the criminalization of HIV non-disclosure

Within this analytic sample (n=584), 148 (25%) women knew someone who had been charged or threatened with a charge for HIV non-disclosure (**Table 5.4**). A similar proportion of participants who were aware versus unaware of the 2012 SCC ruling prior to the interview reported knowing someone who had been charged or threatened with a charge, indicating that some participants may be aware of the existence of HIV non-disclosure prosecutions, while lacking awareness of the current conditions under which PLWH could face a legal obligation to disclose.

5.4.5. HIV disclosure in the climate of HIV non-disclosure criminalization

Overall, 441 (76%) participants had been afraid to disclose their HIV status to others, a response which did not vary significantly by ruling awareness (74% vs. 80%, p=0.102), but was less prevalent among participants who demonstrated complete versus incomplete understanding of the legal obligation to disclose (69% vs. 79%, p=0.005). A minority (n=233, 40%) of participants expressed satisfaction with current community

support services available to help women navigate HIV disclosure to sexual partners, with satisfaction notably higher among participants who were aware versus unaware of the 2012 SCC ruling (44% vs. 29%, p=0.001). In terms of barriers to HIV disclosure, 131 (22%) women were afraid of losing access to health services or care if people found out that they were living with HIV. This belief was less prevalent among participants who were satisfied (yes vs. no) with disclosure support services (18% vs. 26%, p=0.043), and among those aware versus unaware of the 2012 SCC ruling prior to the interview (20% vs. 28%, p=0.055, marginally non-statistically significant).

5.4.6. Healthcare engagement in the climate of HIV non-disclosure criminalization

Overall, 557 (95%) participants had received HIV care in the year before the interview, with infectious disease specialists (76%) or GPs (17%) identified as the primary HIV healthcare provider in most cases. Among participants who received HIV care in the year before interview (n=557), 451 (81%) trusted the healthcare providers at their HIV clinic and 503 (90%) believed that their information was kept confidential, a belief which was more prevalent among participants who were aware compared to those unaware of the 2012 SCC ruling (92% vs. 85%, p=0.011) **(Table 5.4**). Among all participants (n=584), 532 (91%) women believed that HIV healthcare provider-led discussions promoting women's understanding of their rights to confidentiality, respect and quality care in the healthcare setting were very important.

Despite high levels of trust in healthcare providers, 382 (65%) participants believed that HIV disclosure laws might affect the type of information that WLWH would be willing to share with healthcare providers. This belief was more commonly held among participants who were aware of the 2012 SCC ruling prior to the interview (68% vs. 59%, p=0.046) (**Table 5.4**). In bivariable analysis, the proportion of participants who received STI testing in the year before the interview (33% vs. 27%, p=0.098) or who reported recent condomless sex (26% vs. 18%, p=0.090) were non-significantly larger among those who believed the laws might affect information that WLWH would share with healthcare providers compared to those who did not.

5.4.7. Sensitivity analysis

In an adjusted analysis assessing correlates of the revised definition of awareness, associations between ruling awareness and residence in BC vs. Ontario, participation in HIV work in the community since last interview, and awareness of the prevention benefits of ART were observed, consistent with findings noted in the main analysis. Additionally, a positive association between the revised definition of ruling awareness and being in a relationship was observed. Self-reported undetectable HIV viral load and experience of violence as an adult were not significantly associated with ruling awareness when applying the revised definition of awareness (**Supplementary Tables 5S1 and 5S2**).

5.5. Discussion

This analysis is notable for being the first to assess awareness, understanding and perceived healthcare impacts of the criminalization of HIV non-disclosure among the diversity of Canadian WLWH since the 2012 SCC ruling. This landmark ruling increased the reach of criminal liability for HIV non-disclosure to sexual partners in Canada (90, 97). While three quarters of this cohort reported awareness of the 2012 SCC ruling, only one third had a complete understanding of the legal obligation to disclose HIV serostatus to sexual partners. These findings echo previous work conducted prior to the 2012 SCC ruling on HIV non-disclosure, which showed poor understanding of the legal obligation to disclose among Canadian WLWH (75, 131, 202). This analysis validates concerns that PLWH lack understanding of the legal obligation to disclose in the wake of the 2012 SCC ruling (226). In the largest, community-based cohort of WLWH in Canada, participants lack fundamental information to support informed sexual decision-making to protect their health and rights and avoid prosecution.

In adjusted analyses, women reporting identities or characteristics that can contribute to marginalization and suboptimal healthcare engagement were among those less likely to be aware of the 2012 SCC ruling. Specifically, participation in work within the HIV community since the last study interview was positively associated with ruling awareness, likely due to the fact that women actively engaged in the HIV community are

well positioned to learn about HIV disclosure and the law through ASOs and peer-driven mechanisms. This finding emphasizes the benefit of community engagement to facilitate access to key information about HIV disclosure and the law in the current legal climate. Experience of violence was negatively associated with awareness. This finding is a concern, given that survivors of violence and abuse face considerable barriers to safe HIV serostatus disclosure and condom use negotiation (109, 130, 131, 161). Indeed, when examining reports of women who have faced charges for HIV non-disclosure in Canada to date, survivors of violence are strongly over-represented (168). This finding suggests that women who are most at risk of prosecution are least likely to be aware of the HIV non-disclosure case law.

We observed a positive association between awareness of the 2012 SCC ruling and residence in BC compared to Ontario, with no significant difference between Ontario and Quebec. This provincial variation may be driven by the high proportion of immigrant and refugee women in Ontario and Quebec, who may be culturally, socially or geographically isolated from community and support services, and in turn isolated from the most prevalent sources from which women in this cohort learned about HIV non-disclosure case law (100). This observation is a concern, given that Ontario has the largest prevalence of criminal charges against WLWH nationally (85), among whom immigrant women are overrepresented (112). This finding reinforces the urgent need to expand effective culturally sensitive knowledge translation efforts around the current legal obligation to disclose, tailored to the local HIV epidemic within each province. It is important to acknowledge, however, that this provincial variation may be influenced by the composition of this analytic sample. Different recruitment strategies were adopted in the three provinces, relying variably on recruitment through peers, HIV clinics, community organizations, and through other means. By limiting this analysis to the 584 participants who complete the wave 2 survey within the first seven months of study follow-up, BC participants who were well connected to community organisations and peer networks may be disproportionately represented within the analytic sample.

Self-reporting a detectable or unknown HIV plasma viral load was negatively associated with awareness of the 2012 SCC ruling in this analysis. The most likely interpretation of these findings is that achievement of an undetectable HIV viral load

signifies optimal engagement in the cascade of HIV care, meaning that women may experience more opportunities to engage in provider-led discussions about HIV disclosure and the law. The finding that women who do not self-report an undetectable HIV viral load are less likely to be aware of the 2012 SCC ruling is a considerable concern, given that these women may be at increased risk of prosecution if they do not disclose to sexual partners in the wake of the 2012 SCC ruling (90). Our findings suggest that women who are not sufficiently engaged in HIV care to achieve an undetectable viral load, or to be aware of their current viral load, lack awareness of the current HIV non-disclosure case law, which may augment their risk of prosecution in the current legal climate (161)

Finally, not being aware of the HIV prevention benefits of ART was negatively associated with awareness of the 2012 SCC ruling. Participants who understand the importance of maintaining and achieving an undetectable HIV viral load through ART use to prevent onward HIV transmission likely represent women who are well engaged with healthcare services, who benefit from more opportunities to engage in discussions about HIV disclosure and the law in the healthcare setting. What is important to note, however, is that 16% of participants reported awareness of the HIV prevention benefits of ART without being aware of 2012 SCC ruling. Current messaging around the treatment and prevention benefits of ART is built upon empirical evidence that the risk of sexual HIV transmission is negligible if an undetectable HIV viral load is achieved through adherence to ART (14, 98, 269). However, criminal justice and public health systems follow distinct interpretations of HIV transmission risk, such that achievement of an undetectable viral load alone may be insufficient to remove the “realistic possibility” of HIV transmission based on the 2012 SCC ruling (90). It is critical that WLWH are aware of the conditions under which they may face a legal obligation to disclose, in order to avoid prosecution.

When we conducted a sensitivity analysis evaluating a revised definition of ruling awareness that incorporated completeness of understanding of the legal obligation to disclose, correlates of awareness remained largely consistent with our main analysis, with the exception of self-reported HIV viral load and experience of violence, which were no longer independent correlates of ruling awareness. Additionally we observed a

positive association between ruling awareness and being in a relationship when using the revised definition of awareness. It is likely that a greater portion of women who reported being in a relationship were sexually active, resulting in a greater incentive to access comprehensive information on the legal obligation to disclose. However, it is important to note that more than a quarter of participants who were not in a relationship reported recent consensual sex in this sample. Previous work suggests that PLWH who are in non-regular partnerships are less likely to disclose their HIV serostatus to sexual partners (261-263), underlining the gravity of the suggestion of reduced awareness of the current legal obligation to disclose among these participants.

ASOs and peer networks emerged as a common existing and preferred mechanisms for communications about HIV disclosure and the law in this cohort, consistent with qualitative work conducted among immigrant WLWH in Ontario (75). In the wake of the 2012 SCC ruling, many ASOs have made considerable efforts to provide clear and concise information about HIV disclosure and the law (276, 312, 313, 317). However, women-specific community organizations have identified challenges in communicating information about HIV disclosure and the law, including legal complexities, language and literacy issues, HIV-related stigma and the emotionally charged nature of this topic (202). Previous work conducted among Canadian WLWH has shown the value of peer support that is shaped by lived experiences (148). However, our findings suggested that participants who learned about the ruling from peers were less likely to have a complete understanding of the legal obligation to disclose. These findings identify the need for further education and support of knowledge translation efforts around HIV disclosure and the law within community and peer networks, sensitive to the realities of intimate partner violence and stigma, and tailored to the specific needs of the community. It is important to acknowledge that accessing information through ASOs or peer networks requires women to be connected and engaged with the HIV community. Indeed, qualitative interviews with 122 PLWH in Ontario revealed that participants well connected to ASOs more frequently reported accessing information on HIV disclosure and the law from community sources (193). Women who are not openly disclosed may be unable to take advantage of these support services due to concerns of secondary HIV disclosure in the current legal climate (58), which may further isolate them from community support services.

Although the vast majority of this cohort was engaged with healthcare services (with 95% of women having received HIV care since their last interview), healthcare providers were not a common source from which participants learned about the 2012 SCC ruling. Previous Canadian work has identified concerns among healthcare providers that PLWH may avoid seeking support and counselling on HIV disclosure and the law from healthcare providers due to fear of HIV non-disclosure prosecutions, and the potential for subpoena of medical information for use in criminal trials (50). However, findings in this cohort identify a willingness to receive information of this nature from healthcare providers among WLWH, and reveal an overwhelming recognition of HIV healthcare provider-led discussions about HIV disclosure and the law as an important aspect of care.

The suboptimal prevalence of provider-led discussions about HIV disclosure and the law reported in this analysis may reflect competing priorities within the limited time available for consultations, particularly when providing care to women with acutely pressing healthcare needs, owing to multiple comorbidities, poor healthcare engagement or challenging social circumstances. Previous work suggests that Canadian health and social care providers themselves lack awareness and understanding of the legal obligation to disclose (143, 224, 226), which may compromise their inclination and ability to provide legal information of this nature to their patients. Counselling patients on HIV disclosure and the law may present complex challenges for healthcare providers, extending beyond their area of expertise and comfort. Establishing strong connections between healthcare providers caring for PLWH and licensed legal professionals with expertise in this field is of paramount importance. Despite some guidance being available from Canadian legal agencies, and community and professional organisations (213, 287-291), no official best-practice recommendations are available to guide ethical conduct and professional responsibilities for health and social care providers caring for WLWH in the current legal climate.

We observed a high level of provider trust and confidence in the confidential nature of healthcare encounters among women navigating healthcare engagement under the threat of HIV non-disclosure prosecutions. This is encouraging, given that previous work has identified provider trust as a key determinant of healthcare

engagement among PLWH (318, 319). Critically, however, 65% of participants believed that HIV non-disclosure case law might affect the type of information that WLWH would share with their healthcare providers, a belief more commonly held among participants who were aware of the 2012 SCC ruling prior to completing the interview. This finding echoes previous work conducted both in Canada and internationally, suggesting that fear of HIV non-disclosure prosecutions and exposure of confidential medical information may shape the boundaries of what PLWH are willing to discuss with providers in a healthcare setting, which in turn may compromise effective healthcare engagement (50, 143, 144, 146, 225) (320). WLWH in this cohort identified HIV healthcare provider-led discussions about the right to confidentiality and quality care in the healthcare setting as a highly important aspect of holistic healthcare. However, previous work has shown that the risk of subpoena of medical documentation for use in HIV non-disclosure trials may influence discussions around the limits of confidentiality to preserve therapeutic relationships (227). Despite a high level of provider-patient trust within this cohort, our findings suggest that accessing HIV care services under the threat of HIV non-disclosure prosecutions may compromise some aspects of women's healthcare experience. Clear best practice guidelines for health and service providers caring for WLWH in the current legal climate are indicated to educate healthcare providers about HIV disclosure and the law, to guide safe counselling on this issue in the healthcare setting, and to alleviate barriers to holistic healthcare provision that may be experienced in the current legal context.

Finally, our findings suggest that the influence of HIV non-disclosure criminalization on the health and lives of Canadian WLWH extends far beyond the women who have been charged. A quarter of women in our cohort knew someone who had been charged or threatened with a charge for HIV non-disclosure. The use of criminal law against PLWH has been framed as a means to protect women from HIV acquisition within abusive or power-imbalanced partnerships, and promote sexual autonomy (29, 179). However, the intersecting social inequalities and marginalizing identities demonstrated within this cohort undermine the logic of this strategy, and advance arguments from human rights advocates that the use of criminal law against WLWH is a threat to women's health and rights (65). More than three quarters of the women in this cohort had experienced violence, and an equivalent proportion expressed

having been afraid to disclose their HIV serostatus. Almost a quarter of participants feared that disclosing their HIV status might compromise their access to health care services, and those who reported barriers to HIV disclosure, such as dissatisfaction with disclosure support services, were less likely to be aware of the 2012 SCC ruling. Strict legal frameworks regulating HIV disclosure do little to improve the safety and remove barriers to HIV disclosure for marginalized and vulnerable women (202), particularly in the absence of satisfactory disclosure support services.

5.5.1. Limitations

CHIWOS is the largest cohort of WLWH across Canada, thus facilitates robust evaluation of the awareness and perceived impacts of HIV non-disclosure case law across the diverse and intersecting identities of Canadian WLWH. However, despite considerable efforts to enrol harder-to-reach women in the CHIWOS cohort, women who are connected with community and health services are likely overrepresented within our sample. By using wave 2 survey data, we additionally selected women who remained sufficiently engaged with the CHIWOS community to present for a second interview. When we compared baseline characteristics of CHIWOS participants who had completed the wave 2 survey between June 2015 and January 2016 and were included in this analysis, with CHIWOS participants who were not included in the analytic sample, women included in this analysis were less likely to have completed their baseline CHIWOS interview in Ontario, were less likely to be on ART at baseline, and were less likely to have experienced violence as an adult (**Supplementary Table 5S3**).

Many variables captured in this study are self-reported, including our primary outcome variable, meaning outcomes may be influenced by social desirability or recall biases. However, the CHIWOS PRAs received extensive training in methods of survey delivery to reduce biases. As previously discussed, perceived impacts rather than direct personal impacts of the HIV non-disclosure case law on healthcare engagement were assessed in this analysis, which may limit the weight of these findings to inform policy change. Although these findings may not be generalizable beyond the Canadian setting due to the specificity of Canadian HIV non-disclosure case law, they add to the growing body of international literature showing that the overly broad use of the criminal law

against PLWH in many global settings is detrimental to the health and rights of WLWH (29, 66).

5.5.2. Conclusion

In a community-based, multi-site cohort of Canadian WLWH, we observed a lack of awareness and understanding of the current legal obligation to disclose HIV serostatus to sexual partners. While women in this cohort share the unifying identity of being HIV-positive, intersectionality of social identities and vulnerabilities shape awareness and experiences of HIV non-disclosure case law. Adjusted analyses revealed that participation in community HIV work was positively associated with awareness of the 2012 SCC ruling, and experience of violence, having a detectable or unknown HIV viral load and lacking awareness of ART prevention benefits were negatively associated with awareness of the ruling, suggesting that some of the most vulnerable and marginalized WLWH lack fundamental information to avoid prosecution and optimise their health and rights.

Our findings support concerns that living under the threat of HIV non-disclosure prosecutions may negatively shape the environment within which women navigate healthcare engagement, with the majority of participants perceiving that HIV non-disclosure criminalization might influence the type of information that WLWH would be willing to share with providers (159). While participants identified discussions around the criminalization of HIV non-disclosure as an important part of their HIV care, communications of this nature with healthcare providers were lacking. Promoting increased communication around HIV disclosure and the law is an urgent public health priority to ensure all WLWH have access to accurate legal information to optimize their health and rights, and the role of healthcare providers in this process should be further explored. Clarifying the professional role and ethical conduct of health and social care providers caring for WLWH in the current legal climate through best-practice guidelines is critical to maintain trust between WLWH and their providers, and to reduce harms

incurred by navigating healthcare engagement under the threat of HIV non-disclosure prosecutions.

This research was conducted in response to a call for action from CHIWOS peer researchers and participants, and this topic remains a considerable concern for many WLWH both in Canada and internationally. Meaningful involvement of WLWH is a critical part of this research, to ensure women's experiences are accurately and sensitively represented. The advancement of community organisation and peer network involvement in dialogues around HIV disclosure and the law is critical to empower community leadership in this field.

Table 5-1. Socio-demographic, behavioural and clinical characteristics of women living with HIV, stratified by self-reported awareness of 2012 SCC ruling on HIV non-disclosure (n=584)

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Socio-demographic Variables					
Age at interview	45 (37-52)	584	46 (37-53)	41 (35-51)	0.004
Province of interview		584			0.244
British Columbia	163 (28)		129 (30)	34 (22)	
Ontario	265 (45)		191 (44)	74 (48)	
Quebec	156 (27)		111 (26)	45 (29)	
Ethnicity		584			0.090
Indigenous	138 (24)		93 (22)	45 (29)	
African/Caribbean/Black	169 (29)		126 (29)	43 (28)	
Caucasian	236 (40)		181 (42)	55 (36)	
Other ethnicity	41 (7)		31 (7)	10 (7)	
Years living in Canada		581			0.467
Born in Canada	373 (64)		274 (64)	99 (65)	
< 10 years	113 (19)		88 (21)	25 (16)	
≥10 years	95 (16)		67 (16)	28 (18)	
Sexual orientation		581			0.501
Heterosexual	498 (86)		370 (86)	128 (84)	
LGBTTQ	83 (14)		58 (14)	25 (16)	
Education completed		580			<0.001
> High school	296 (51)		237 (55)	59 (39)	
≤ High school	284 (49)		191 (45)	93 (61)	

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Currently employed		576			0.427
Yes	192 (33)		148 (35)	44 (29)	
No	384 (67)		276 (65)	108 (71)	
Unstable housing*		584			0.029
No	506 (87)		382 (89)	124 (81)	
Yes	78 (13)		49 (11)	29 (19)	
Participated in HIV work in community since last interview		584			<0.001
Yes	210 (36)		173 (40)	37 (24)	
No	374 (64)		258 (60)	116 (76)	
Incarceration since last interview		584			0.292
Yes	21 (4)		13 (3)	8 (5)	
No	563 (96)		418 (97)	145 (95)	
Incarceration ever		583			0.487
Yes	207 (36)		147 (34)	60 (39)	
No	376 (64)		283 (66)	93 (61)	
Injection drug use L6M		580			0.038
Yes	57 (10)		35 (8)	22 (14)	
No	523 (90)		393 (92)	130 (86)	
Injection drug use ever		576			0.255
Yes	186 (32)		132 (31)	54 (36)	
No	390 (68)		293 (69)	97 (64)	
Experienced violence as adult		555			0.073
Yes	446 (80)		318 (79)	128 (85)	
No	109 (20)		87 (21)	22 (15)	
HIV-related stigma		584			0.004
Low stigma (score ≤ median)	295 (51)		233 (54)	62 (41)	
High stigma (score > median)	289 (49)		198 (46)	91 (59)	

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
HIV Clinical Variables					
Years living with HIV		567			0.825
<6	146 (26)		106 (25)	40 (28)	
6-14	222 (39)		163 (39)	59 (41)	
>14	199 (35)		154 (36)	45 (31)	
ART experience		584			0.038
On ART	497 (85)		377 (88)	120 (79)	
Previously on ART	45 (8)		28 (7)	17 (11)	
Never on ART	36 (6)		22 (5)	14 (9)	
Self-reported viral load at interview		584			0.021
Undetectable	490 (84)		377 (87)	113 (74)	
Detectable/don't know	94 (16)		54 (13)	40 (26)	
Aware of ART prevention benefits§		584			<0.001
Yes	429 (73)		335 (78)	94 (61)	
No	155 (27)		96 (22)	59 (39)	
Received HIV medical care since last interview		584			<0.001
Yes	557 (95)		419 (97)	138 (90)	
No	27 (5)		12 (3)	15 (10)	
Months receiving care from HIV doctor‡	72 (36-120)	516	72 (36-132)	48 (24-120)	0.043
Sexual Health Variables					
In a relationship		584			0.767

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Yes	188 (32)		139 (32)	49 (32)	
No	396 (68)		292 (68)	104 (68)	
Consensual sex in L6M		553			0.868
No consensual sex	306 (55)		227 (56)	79 (54)	
Condom protected sex	111 (20)		80 (20)	31 (21)	
Condomless sex	136 (25)		101 (25)	35 (24)	
Number of consensual sex partners L6M		539			0.293
0	306 (57)		227 (57)	79 (56)	
1	196 (36)		142 (36)	54 (39)	
>1	37 (7)		30 (8)	7 (5)	
Serodiscordant partners in L6M		538			0.998
No sexual partner	306 (57)		227 (57)	79 (56)	
All HIV-positive partners	64 (12)		47 (12)	17 (12)	
≥1 HIV negative or unknown status partner	168 (31)		124 (31)	44 (31)	
Sex work L6M		552			0.306
Yes	34 (6)		24 (6)	10 (7)	
No	518 (94)		383 (94)	135 (93)	
Tested for STI in past year		584			0.081
Yes	181 (31)		125 (29)	56 (37)	
No	413 (71)		306 (71)	97 (63)	

L6M: last 6 months before interview; STI: sexually transmitted infection (chlamydia, gonorrhoea or syphilis); ART: antiretroviral therapy; LGBTTQ: lesbian, gay, bisexual, transgender, Two-Spirit and queer.

*defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room occupancy hotel; ‡participants who had received HIV medical care since last interview and were willing to answer questions about HIV doctor were included; § belief that ART makes the risk of HIV transmission a lot lower

Table 5-2. Crude and adjusted odds ratios for correlates of awareness of the 2012 SCC ruling on HIV non-disclosure among women living with HIV (n=551)

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age at interview (per year increase)	1.03 (1.01-1.04)	1.02 (1.00-1.04)†
Province of interview		
Ontario	1.00	1.00
British Columbia	1.58 (0.99-2.52)	1.94 (1.10-3.40)
Quebec	1.08 (0.69-1.70)	0.93 (0.56-1.56)
Ethnicity		Not selected
Caucasian	1.00	
Indigenous	0.62 (0.39-1.00)	
African/Caribbean/Black	0.89 (0.55-1.43)	
Other	0.99 (0.45-2.14)	
Education		
> High school	1.00	1.00
≤ High school	0.56 (0.38-0.82)	0.72 (0.48-1.10)
Unstable housing*		Not selected
No	1.00	
Yes	0.53 (0.32-0.89)	
Participated in HIV work in community since last interview		
No	1.00	1.00
Yes	2.09 (1.37-3.19)	1.74 (1.10-2.76)
Injection drug use in 6 months before interview		
No	1.00	1.00
Yes	0.50 (0.28-0.89)	0.53 (0.27-1.02)
Self-reported viral load at interview		
Undetectable	1.00	1.00
Detectable/don't know	0.36 (0.22-0.58)	0.52 (0.30-0.90)
Received HIV medical care since last interview		Not selected
Yes	1.00	
No	0.25 (0.11-0.57)	

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Aware of prevention benefits of ART§		
Yes	1.00	1.00
No	0.45 (0.30-0.67)	0.59 (0.38-0.91)
Tested for an STI in past year		Not selected
No	1.00	
Yes	0.69 (0.47-1.03)	
Experience of violence as an adult		
No	1.00	1.00
Yes	0.64 (0.38-1.06)	0.39 (0.21-0.70)
HIV-related stigma		
Low stigma (score <= median)	1.00	1.00
High stigma (score > median)	0.58 (0.40-0.85)	0.71 (0.47-1.07)

25 participants with missing data excluded from the model

OR: Odds ratio; STI: sexually transmitted infection (gonorrhea, chlamydia or syphilis); ART: antiretroviral therapy

†P = 0.078; *defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room occupancy hotel; § self-reported belief that ART makes the risk of HIV transmission a lot lower

Table 5-3. Sources of information about HIV disclosure and the law among participants self-reporting awareness of the 2012 SCC ruling, stratified by completeness of understanding of the legal obligation to disclose (n=431).

	Participants aware of the ruling (n=431, 100%)	Participants aware of the ruling with complete understanding (n=204, 47%)	Participants aware of the ruling with incomplete understanding (n=227, 53%)	
Variable	**Median [IQR] or n (%)**			**P value**
Source from which participants learned about HIV disclosure and the law*				
AIDS service organizations (ASO)	255 (59)	113 (47)	142 (63)	0.131
Newspapers/media	152 (35)	65 (27)	87 (38)	0.161
Friends/peers	148 (34)	56 (23)	92 (41)	0.043
Health care providers	115 (27)	64 (27)	51 (22)	0.037
Canadian HIV/AIDS legal network	108 (25)	60 (25)	48 (21)	0.048
Service providers (not ASO)	20 (5)	11 (5)	9 (4)	0.482
Other	23 (5)	14 (6)	9 (4)	
Type of healthcare provider participants talked to about HIV disclosure and the law*				
HIV physician	164 (38)	93 (39)	71 (31)	0.002
Community worker	82 (19)	40 (17)	42 (19)	0.770
General practitioner	55 (13)	23 (10)	32 (14)	0.381
Peer worker	51 (12)	31 (13)	20 (9)	0.040
Nursing staff	46 (11)	30 (13)	16 (7)	0.010
Social worker	47 (11)	22 (9)	25 (11)	0.939
Counsellor	24 (6)	13 (5)	11 (5)	0.490
Case manager	15 (3)	5 (2)	10 (4)	0.269
Other	4 (1)	2 (1)	2 (1)	0.915
None	156 (36)	58 (24)	98 (43)	0.001
DK/PNTA	6 (1)	2 (1)	4 (2)	

*Not mutually exclusive, as such percentage totals may exceed 100%; DK/PNTA: Don't know/prefer not to answer.

Table 5-4. Experience of the case law, HIV disclosure and healthcare engagement in the climate of HIV non-disclosure criminalization, stratified by self-reported awareness of 2012 SCC ruling on HIV non-disclosure (n=584).

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median (IQR) or n (%)**	**Total**	**Median (IQR) or n (%)**		**P value**
Experience of the criminalization of HIV non-disclosure					
Know someone charged or threatened with charge		584			0.143
Yes	148 (25)		116 (27)	32 (21)	
No	434 (75)		294 (73)	120 (79)	
Disclosure in the climate of HIV non-disclosure criminalization					
Afraid to disclose HIV status to others		584			0.102
Yes	441 (76)		318 (74)	123 (80)	
No	143 (24)		113 (26)	30 (19)	
Afraid of losing access to health and care services if disclose HIV status		584			0.055
Yes	131 (22)		88 (20)	43 (28)	
No	453 (78)		343 (79)	110 (71)	
Satisfied with HIV disclosure support services		584			0.001
No	351 (60)		242 (56)	109 (71)	
Yes	233 (40)		189 (44)	44 (29)	

	All participants (n=584, 100%)		Participants aware of the ruling (n=431, 74%)	Participants not aware of the ruling (n=153, 26%)	
Variable	**Median (IQR) or n (%)**	**Total**	**Median (IQR) or n (%)**		**P value**
Healthcare engagement in the climate of criminalization of HIV non-disclosure					
Believe information is kept confidential at HIV clinic		557*			0.011
Yes	503 (90)		386 (92)	117 (85)	
No	54 (10)		33 (8)	21 (15)	
Trust in health professionals at HIV clinic		557*			0.288
Yes	451 (81)		342 (82)	109 (79)	
No	106 (19)		77 (18)	29 (21)	
Importance of provider discussing HIV disclosure & law		584			0.688
Very important	488 (84)		359 (83)	129 (84)	
A little important	45 (8)		32 (7)	13 (8)	
Not important	51 (9)		40 (9)	11 (7)	
Importance of provider ensuring women's understanding of right to confidentiality, respect & quality care		584			0.177
Very important	532 (91)		397 (92)	135 (88)	
A little important	39 (7)		23 (5)	16 (10)	
Not important	13 (2)		11 (3)	2 (1)	
HIV disclosure laws might affect type of information shared with providers		584			0.046
Yes	382 (65)		292 (68)	90 (59)	
No	202 (35)		139 (32)	63 (41)	
*excluding n=27 participants who had not received HIV care since last CHIWOS interview					

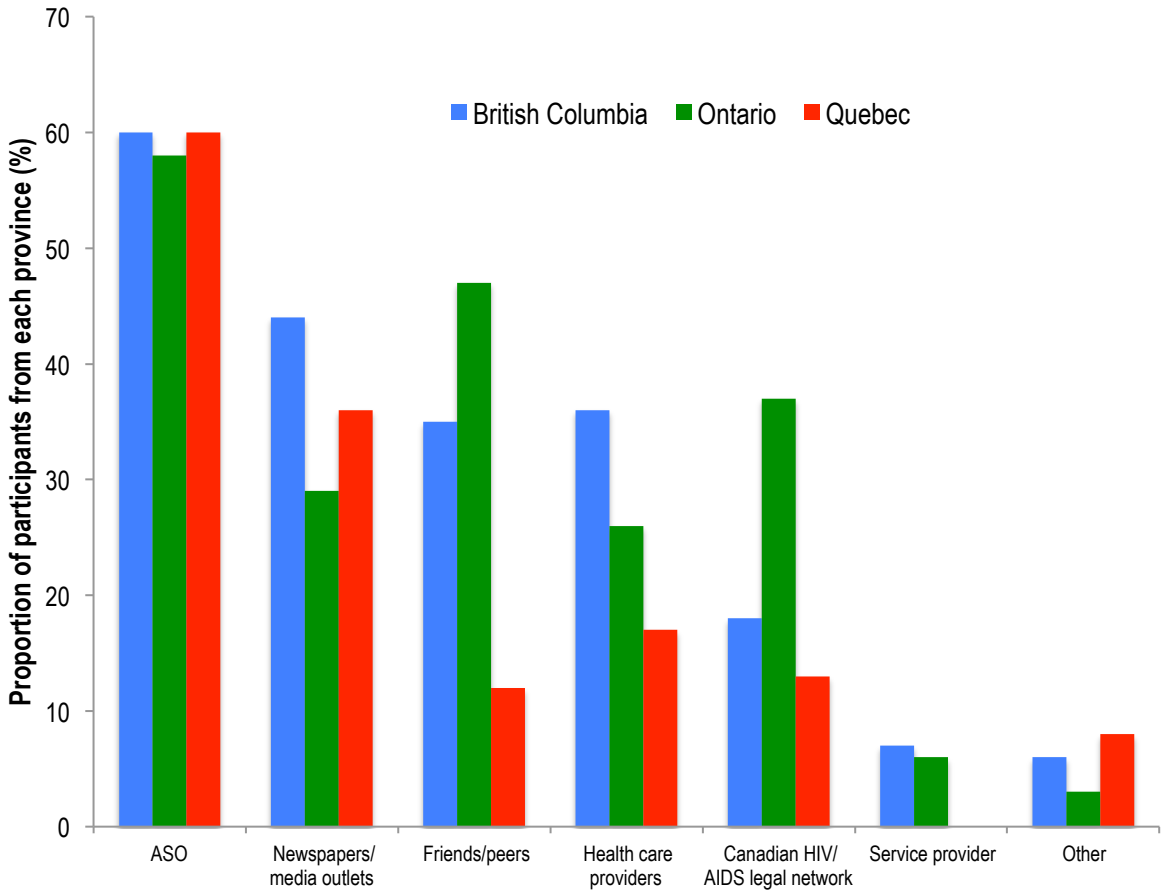


Figure 5-1. Sources from which participants aware of the 2012 SCC ruling on HIV non-disclosure learned about the ruling, stratified by province of interview (n=431)

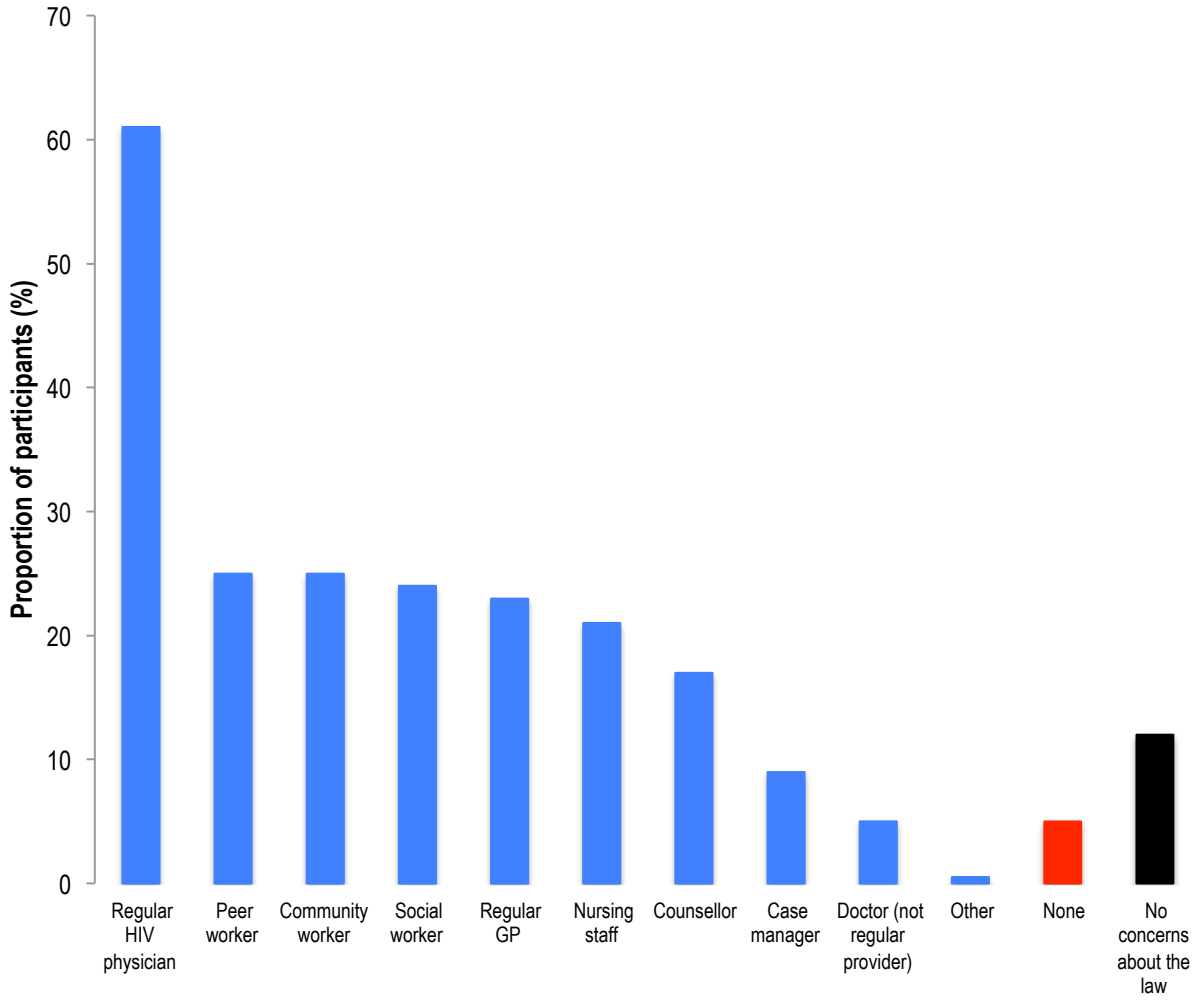


Figure 5-2. Type of healthcare providers that participants would feel comfortable talking to about questions or concerns about HIV disclosure and the law (not mutually exclusive) (n=584).

5.5.3. Supplementary tables

Table 5S1: Socio-demographic, behavioural and clinical characteristics of women living with HIV, stratified by whether or not participants self-reported awareness of the 2012 SCC ruling and a complete understanding of the legal obligation to disclose (n=584).

	All participants (n=584, 100%)		Participants aware of the ruling with complete understanding (n=204, 35%)	Participants unaware of the ruling, or aware with incomplete understanding (n=380, 65%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Socio-demographic Variables					
Age at interview	45 (37-52)	584	46 (37-54)	44 (37-51)	0.065
Province of interview		584			0.022
British Columbia	163 (28)		69 (34)	94 (25)	
Ontario	265 (45)		78 (38)	187 (49)	
Quebec	156 (27)		57 (28)	99 (26)	
Ethnicity		584			0.085
Indigenous	138 (24)		40 (20)	98 (26)	
African/Black/Caribbean	169 (29)		53 (26)	116 (31)	
Caucasian	236 (40)		93 (46)	143 (38)	
Other ethnicity	41 (7)		18 (9)	23 (6)	
Years living in Canada		581			0.746
Born in Canada	373 (64)		133 (66)	240 (63)	
< 10 years	113 (19)		36 (18)	77 (20)	
≥10 years	95 (16)		34 (17)	61 (16)	

	All participants (n=584, 100%)		Participants aware of the ruling with complete understanding (n=204, 35%)	Participants unaware of the ruling, or aware with incomplete understanding (n=380, 65%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Sexual orientation		581			0.645
Heterosexual	498 (86)		173 (85)	325 (86)	
LGBTTQ	83 (14)		31 (15)	52 (14)	
Education completed		580			0.015
≤ High school	296 (51)		85 (42)	199 (53)	
> High school	284 (49)		117 (58)	179 (47)	
Currently employed		576			0.853
Yes	192 (33)		68 (34)	124 (33)	
No	384 (67)		133 (67)	251 (67)	
Unstable housing*		584			0.064
No	506 (87)		184 (90)	322 (85)	
Yes	78 (13)		20 (10)	58 (15)	
Participated in HIV work in community since last interview		584			0.003
Yes	210 (36)		90 (44)	120 (32)	
No	374 (64)		114 (56)	260 (68)	
Incarceration since last interview		584			0.534
Yes	21 (4)		6 (3)	15 (4)	
No	563 (96)		198 (97)	365 (96)	
Incarceration ever		583			0.421
Yes	207 (36)		68 (33)	139 (37)	
No	376 (64)		136 (67)	240 (63)	
Injection drug use L6M		580			0.087
Yes	57 (10)		14 (7)	43 (11)	
No	523 (90)		188 (93)	335 (89)	

	All participants (n=584, 100%)		Participants aware of the ruling with complete understanding (n=204, 35%)	Participants unaware of the ruling, or aware with incomplete understanding (n=380, 65%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Injection drug use ever		576			0.838
Yes	186 (32)		66 (33)	120 (32)	
No	390 (68)		135 (67)	255 (68)	
Experienced violence as adult		555			0.572
Yes	446 (80)		156 (82)	290 (80)	
No	109 (20)		35 (18)	74 (20)	
HIV-related stigma		584			0.057
Low stigma (score ≤ median)	295 (51)		114 (56)	181 (48)	
High stigma (score > median)	289 (49)		90 (44)	199 (52)	
HIV Clinical Variables					
Years living with HIV		567			0.825
<6	146 (26)		106 (25)	40 (28)	
6-14	222 (39)		163 (39)	59 (41)	
>14	199 (35)		154 (36)	45 (31)	
ART experience		584			0.181
On ART	497 (85)		182 (89)	315 (84)	
Previously on ART	45 (8)		14 (7)	31 (8)	
Never on ART	36 (6)		8 (4)	28 (7)	
Self-reported HIV plasma viral load		584			0.020
Undetectable	490 (84)		181 (89)	309 (81)	
Detectable/ don't know	94 (16)		23 (11)	71 (19)	

	All participants (n=584, 100%)		Participants aware of the ruling with complete understanding (n=204, 35%)	Participants unaware of the ruling, or aware with incomplete understanding (n=380, 65%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
Aware of ART prevention benefits§		584			0.002
Yes	429 (73)		166 (81)	263 (69)	
No	155 (27)		38 (19)	117 (31)	
Received HIV medical care since last interview		584			0.025
Yes	557 (95)		200 (98)	357 (94)	
No	27 (5)		4 (2)	23 (6)	
Months receiving care from HIV doctor‡	72 (36-120)	516	72 (36-132)	48 (24-120)	0.043
Sexual Health Variables					
Currently in a relationship		584			0.035
Yes	188 (32)		77 (38)	111 (29)	
No	396 (68)		127 (62)	269 (71)	
Consensual sex in L6M		553			0.056
No consensual sex	306 (55)		95 (49)	211 (59)	
Condom protected sex	111 (20)		41 (21)	70 (19)	
Condomless sex	136 (25)		58 (30)	78 (22)	
Number of consensual sex partners in L6M		539			0.035
0	306 (57)		95 (50)	211 (60)	
1	196 (36)		77 (41)	119 (34)	
>1	37 (7)		18 (9)	19 (5)	
Serodiscordant partners in L6M		538			0.063
No sexual partner	306 (57)		95 (50)	211 (60)	

	All participants (n=584, 100%)		Participants aware of the ruling with complete understanding (n=204, 35%)	Participants unaware of the ruling, or aware with incomplete understanding (n=380, 65%)	
Variable	**Median [IQR] or n (%)**	**Total**	**Median [IQR] or n (%)**		**P value**
All HIV-positive partners	64 (12)		28 (15)	36 (10)	
≥1 HIV-negative/unknown status partner	168 (31)		67 (35)	101 (29)	
Sex work L6M		552			0.985
Yes	34 (6)		12 (6)	22 (6)	
No	518 (94)		182 (94)	336 (94)	
Tested for STI in past year		584			0.479
Yes	181 (31)		67 (33)	114 (30)	
No	413 (71)		137 (67)	266 (70)	

L6M: last 6 months before interview; STI: sexually transmitted infection (specifically chlamydia, gonorrhoea or syphilis); ART: antiretroviral therapy; LGBTTQ: lesbian, gay, bisexual, transgender, Two-Spirit and queer.

*defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room occupancy hotel; ‡participants who had received HIV medical care since last interview, and were willing to answer questions about HIV doctor were included; § self-reported belief that ART makes the risk of HIV transmission a lot lower.

Table 5S2: Crude and adjusted odds ratios for correlates of revised definition of awareness of the 2012 SCC ruling on HIV non-disclosure among women living with HIV (n=529)

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age at interview date (years)	1.02 (1-1.03)	Not selected
Province of interview		
Ontario	1.00	1.00
British Columbia	1.63 (1.07-2.49)	1.86 (1.17-2.95)
Quebec	1.31 (0.84-2.04)	1.36 (0.86-2.15)
Ethnicity		
Caucasian	1.00	Not selected
Indigenous	0.62 (0.39-0.99)	
African/Caribbean/Black	0.75 (0.48-1.16)	
Other	1.13 (0.57-2.24)	
Education		
> High school	1.00	1.00
≤ High school	0.65 (0.46-0.94)	0.74 (0.51-1.09)
Unstable Housing*		
No	1.00	Not selected
Yes	0.61 (0.34-1.07)	
Participated in HIV work in community since last interview		
No	1.00	1.00
Yes	1.74 (1.21-2.52)	1.53 (1.04-2.25)
Injection drug use L6M		
No	1.00	1.00
Yes	0.63 (0.33-1.19)	0.52 (0.26-1.03)
Self-reported viral load		
Undetectable	1.00	Not selected
Detectable/don't know	0.49 (0.28-0.85)	
HIV medical care since last interview		
Yes	1.00	Not selected
No	0.33 (0.11-0.99)	

Variable	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Aware of prevention benefits of ART§		
Yes	1.00	1.00
No	0.52 (0.34-0.79)	0.55 (0.35-0.85)
In a relationship		
No	1.00	1.00
Yes	1.57 (1.08-2.29)	1.73 (1.17-2.55)
Consensual sex in L6M		
No consensual sex	1.00	Not selected
Sex with 100% condom use	1.46 (0.92-2.32)	
Sex without 100% condom use	1.47 (0.96-2.27)	
Serodiscordant sexual partners in L6M		
No sexual partner	1.00	Not selected
All HIV-positive partners	0.65 (0.37-1.14)	
≥1 HIV-negative/unknown status partner	0.93 (0.51-1.69)	
HIV-related stigma		
Low stigma (score ≤ median)	1.00	Not selected
High stigma (score > median)	0.74 (0.52-1.06)	

n=55 participants with missing data excluded from the model.

L6M: last 6 months before interview; ART: antiretroviral therapy; OR: odds ratio.

*defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room occupancy hotel; § self-reported belief that ART makes the risk of HIV transmission a lot lower.

Table 5S3: Baseline socio-demographic, behavioural and clinical characteristics of all CHIWOS participants, stratified by inclusion in the analytic sample for this analysis (n=1425)

		Participants included in analytic sample (n=584, 41%)	Participants not included in analytic sample (n=841, 59%)‡	
Variable	**Total**	**Median [IQR] or n (%)**		**P value**
Age at interview	1425	43 (35-50)	42 (35-50)	0.885
Province of interview	1425			0.008
British Columbia		163 (28)	192 (23)	
Ontario		265 (45)	449 (53)	
Quebec		156 (27)	200 (24)	
Ethnicity	1425			0.796
Indigenous		138 (24)	180 (21)	
African/Caribbean/Black		169 (29)	249 (30)	
Caucasian		236 (40)	349 (41)	
Other ethnicity		41 (7)	63 (7)	
Education completed	1418			0.874
> High school		272 (47)	386 (46)	
≤ High school		311 (53)	449 (54)	
Unstable housing*	1425			0.319
No		516 (88)	757 (90)	
Yes		68 (12)	84 (10)	
Incarceration ever	1422			0.324
Yes		206 (35)	318 (38)	
No		377 (65)	521 (62)	
Injection drug use ever	1399			0.622
Yes		186 (32)	254 (31)	
No		392 (68)	567 (69)	

		Participants included in analytic sample (n=584, 41%)	Participants not included in analytic sample (n=841, 59%)‡	
Variable	**Total**	**Median [IQR] or n (%)**		**P value**
Experienced violence as adult	1318			0.008
Yes		414 (77)	646 (83)	
No		124 (23)	134 (17)	
Years living with HIV	1377			0.837
<6		146 (26)	199 (25)	
6-14		223 (39)	330 (41)	
>14		198 (35)	281 (35)	
ART experience	1418			0.035
On ART		468 (81)	710 (85)	
Previously on ART		26 (4)	40 (5)	
Never on ART		87 (15)	87 (11)	
Self-reported viral load at interview	1425			0.258
Undetectable		442 (76)	658 (78)	
Detectable/don't know		142 (24)	183 (22)	
Aware of ART prevention benefits§	1414			0.078
Yes		398 (69)	538 (64)	
No		180 (31)	298 (36)	

Baseline data from wave 1 survey responses presented

*defined as living outside/in a car/couch surfing, living in a transition house/halfway house/shelter/single room

‡including 1 participant who completed wave 2 survey but chose not to answer questions on HIV criminalization

Chapter 6. Summary, Contributions, Recommendations, Future Research and Conclusion

6.1. Summary of objectives

The objectives of this thesis were: 1) to comprehensively review the literature to investigate the impact of criminalization of HIV non-disclosure on the healthcare engagement of WLWH in Canada; 2) to estimate the prevalence and correlates of facing a legal obligation to disclose HIV status to sexual partners based on the 2012 SCC ruling on HIV non-disclosure among PLWH who have used injection drugs in a Canadian setting; 3) to assess the awareness, understanding and perceived impacts of HIV non-disclosure case law among PLWH who have used illicit drugs in a Canadian setting; and 4) to assess the awareness, understanding and perceived healthcare impacts of HIV non-disclosure case law among WLWH across three Canadian provinces. A critical feminist, social justice framework was applied throughout all aspects of this research, and the meaningful involvement of WLWH was prioritised.

6.2. Summary of findings

The original analyses presented within this doctoral thesis contribute key evidence to the existing literature that investigates how the criminalization of HIV non-disclosure affects the health and rights of WLWH across Canada. Chapter 2 of this thesis presents a comprehensive literature review of the impact of the criminalization of HIV non-disclosure on the healthcare engagement of WLWH in Canada, which was published in the *Journal of the International AIDS Society* in December 2015 (159). This review

revealed that the criminalization of HIV non-disclosure represents a structural barrier to the healthcare engagement of PLWH in Canada across key stages of the cascade of HIV care, compromising access to HIV testing, and linkage to and retention in HIV care services for some PLWH. This review identified key limitations of the existing body of literature, which informed priority areas for interrogation within this doctoral research project, and shaped the scope and direction of analyses. Specifically, a dearth of research exploring the impact of criminalization of HIV non-disclosure on the healthcare engagement of WLWH across Canada emerged as a key concern, given gendered barriers to HIV serostatus disclosure and sex-based disparities in engagement across the cascade of HIV care observed in a Canadian setting (8, 134-138, 189). Similarly, a lack of research among communities who are disproportionately affected by HIV, underserved by health services, or who encounter considerable barriers to safe disclosure was acknowledged. Furthermore, this review noted that limited research has been conducted in the wake of the 2012 SCC ruling on HIV non-disclosure, which expanded the reach of criminal liability for HIV non-disclosure nationally, and confirmed the relevance of clinical records to support viral load testimony in criminal trials (97). Overall, the review identified a critical need for research investigating the application, awareness and perceived healthcare impacts of HIV non-disclosure case law among the diversity of WLWH across Canada in the wake of the 2012 SCC ruling.

Chapter 3 of this thesis presents a cross-sectional analysis conducted within a subset (n=176) of participants enrolled in a cohort of marginalized and criminalized PLWH who use illicit drugs in Vancouver. This analysis sought to determine the proportion of sexually-active participants who have used injection drugs who would face a legal obligation to disclose their HIV status before penile-vaginal intercourse if both condom use and a low viral load were required to avoid criminal liability for HIV non-disclosure, based on the SCC's interpretation of the legal test for HIV non-disclosure in its 2012 ruling. Despite the majority of participants demonstrating sustained engagement within the cascade of HIV care and achieving optimal treatment outcomes (94% with a viral load <1500 copies/mL), almost half (44%) of participants would face a legal obligation to proactively disclose their HIV serostatus to sexual partners if both condom use and low viral load were required to negate the realistic possibility of HIV transmission. In multivariable analysis, female sex, having only one recent sexual

partner, and being in a stable relationship were independently associated with facing a legal obligation to disclose under these circumstances. Findings from this analysis suggest that current HIV non-disclosure case law may disproportionately impact marginalized and vulnerable WLWH in Canada, who also experience considerable barriers to safe HIV serostatus disclosure and optimal healthcare engagement. This analysis is currently in press at the journal *CMAJ Open* (161).

Chapters 4 and 5 examine the awareness and understanding of the legal obligation to disclose in the wake of the 2012 SCC ruling, and investigate perceived healthcare impacts of HIV non-disclosure case law within two Canadian HIV cohorts.

Chapter 4 uses data drawn from a cross-sectional supplemental survey administered to 249 PLWH (including 98 WLWH) who use illicit drugs in Vancouver. This survey assessed self-reported awareness and understanding of the 2012 SCC ruling on HIV non-disclosure, identified existing and preferred sources of information about HIV disclosure and the law, and evaluated perceived impacts of HIV non-disclosure case law on healthcare engagement, sexual conduct and disclosure practices. Despite the majority of participants being optimally engaged in HIV treatment and care, a minority (45%) were aware of the 2012 SCC ruling, and even fewer (18%) demonstrated a complete understanding of the legal obligation to disclose, which may place them at risk of prosecution. In multivariable analysis, awareness of the 2012 SCC ruling was negatively associated with HIV RNA viral load suppression (<50 copies/mL) and positively associated with recent condomless sex compared to no sex, with no significant difference by participant sex. A similar trend towards a negative association between awareness of the 2012 SCC ruling and HIV viral load suppression was noted in bivariable analysis limited to the 98 female participants, although the association was not statistically significant. Discussions around HIV disclosure and the law were lacking from healthcare settings, although participants expressed a willingness to engage in these discussions with healthcare providers. Consistent with previous public health concerns raised in the current legal context (225), a majority (56%) of participants believed that HIV non-disclosure case law might influence the type of information PLWH would share with healthcare providers.

Finally, Chapter 5 presents an analysis assessing awareness of the 2012 SCC ruling, understanding of the legal obligation to disclose, and perceived impacts of HIV non-disclosure case law on healthcare engagement within a subset (n=584) of participants enrolled in a community-based cohort of WLWH in BC, Ontario and Quebec. Although the majority (74%) of participants were aware of the 2012 SCC ruling, only a third (35%) had a complete understanding of the legal obligation to disclose. In multivariable analysis, participation in HIV community work in the year before interview was positively associated with awareness of the 2012 SCC ruling, while experience of violence as an adult, a self-reported detectable or unknown HIV viral load, and lack of awareness of the prevention benefits of ART were negatively associated with ruling awareness. Our findings suggest that marginalized women who are less connected to community and healthcare services lack awareness of the HIV non-disclosure case law. Consistent with findings from the ACCESS cohort, provider-led discussions around HIV disclosure and the law were lacking in healthcare settings, despite women identifying this as an important aspect of their healthcare, and expressing willingness to receive information from this source. Within our analytic sample, most (65%) women believed that disclosure laws might affect the information WLWH would share with providers, a belief that was more commonly expressed among women who were aware of the 2012 SCC ruling prior to the interview.

The collective findings of this thesis contribute novel evidence corroborating the harmful impact of the criminalization of HIV non-disclosure on the health and rights of WLWH in Canada. Original analyses indicate that, in the wake of a revised legal precedent for HIV non-disclosure prosecutions set by the SCC, the risk of prosecution is most acutely felt by vulnerable and marginalized women who experience challenges to safe disclosure, effective healthcare engagement and condom use negotiation. Adding further weight to this concern, findings presented in this thesis suggest that WLWH who are most vulnerable and poorly engaged with community and health services are less likely to be aware of the 2012 SCC ruling, and thus lack fundamental information about HIV disclosure and the law to avoid prosecution, which may further compromise health outcomes. While findings from analyses conducted within the ACCESS cohort suggest that PLWH who are optimally engaged in healthcare services are less likely to be aware of HIV non-disclosure case law, this marginalized and criminalized cohort includes

PLWH who experience competing health and social challenges, and who are historically harder to retain in healthcare services (286). As such, within the limited time available during consultations, healthcare providers serving this population may prioritise HIV–related clinical outcomes and other pressing medical concerns to optimise health outcomes in the short term, over discussions concerning more distal implications of HIV non-disclosure case law. Within both HIV cohorts we observed a lack of provider-led discussions about HIV disclosure and the law, even among participants who were optimally engaged in health services, despite participants expressing a clear willingness to participate in discussions of this nature in the healthcare setting. Finally, the evidence generated in this thesis reveals that the criminalization of HIV non-disclosure may shape the boundaries of information that women are willing to share with healthcare providers, which may compromise effective healthcare engagement among WLWH, and augment sex-based disparities in treatment outcomes reported in a Canadian setting (8, 134-138, 189).

6.3. Unique contributions

The research papers presented within this thesis collectively represent a unique contribution to the emerging literature on the harmful impacts of the criminalization of HIV non-disclosure in Canada, one of the countries that most aggressively uses the criminal law against PLWH globally (28). Despite numerous commentaries identifying the importance of applying a feminist lens when considering the impacts of the criminalization of HIV non-disclosure (30, 111, 112), women-centered analyses of this nature are limited in the Canadian setting (159). Empirical findings from this thesis fill critical knowledge gaps in this field, contributing novel evidence pertaining to the impact of HIV non-disclosure criminalization on the health and rights of WLWH in Canada. Although this thesis presents analyses specifically focussing on Canadian HIV non-disclosure case law, given that over 61 countries globally have established HIV-specific punitive laws, findings presented in this thesis may also be relevant to similar international contexts where the criminal law is broadly applied to prosecute PLWH.

These findings may also be used to caution other global settings from pursuing punitive mechanisms of HIV prevention similar to those applied in the Canadian setting.

The application of critical feminist and social justice frameworks throughout this thesis facilitate a key appreciation of intersecting vectors of oppression experienced by WLWH, in terms of gender, race, and sexual orientation, and to recognise the influence of social identities and inequities in shaping women's lives in the current legal context (60, 79, 141). Consistent with social justice principles (152), this work captured the experiences of marginalized and vulnerable WLWH who may be disproportionately affected by the criminalization of HIV non-disclosure, and represented the perceptions and experiences of women who have been historically underserved by HIV services, who lack the means to advocate for their health and rights, and who have previously been absent from research assessing the impacts of HIV criminalization in the healthcare setting.

By incorporating findings generated from participants enrolled in two longitudinal HIV cohorts, ACCESS and CHIWOS, this thesis was well positioned to evaluate awareness and perceived healthcare impacts of HIV non-disclosure case law across the diverse social and economic identities of WLWH in Canada. The utilization of CHIWOS data enabled assessment of key research objectives within the largest community-collaborative cohort of WLWH in Canada, capturing the experiences of WLWH across three Canadian provinces. During recruitment, CHIWOS enrolment prioritised the representation of marginalized and vulnerable women who are disproportionately affected by HIV in Canada or underserved by health services. Using CHIWOS data enabled a comprehensive assessment of how intersecting identities contributing to HIV-related stigma, marginalization and isolation influence awareness and understanding of HIV non-disclosure case laws and shape engagement with health and social care providers, as well as facilitating interprovincial comparisons. Most Canadian analyses preceding this work were conducted in the province of Ontario, likely due to the fact that this province comprises the largest numbers of PLWH (84) and HIV non-disclosure prosecutions (57, 85). However, in light of provincial differences in the socio-demographic identities of WLWH (84, 237), ART expansion (237) and the number of HIV non-disclosure prosecutions (57), in addition to varied interpretations of the HIV non-

disclosure case law by lower courts across Canada (93), conducting analyses across Canadian provinces is of considerable value.

By evaluating key research objectives within the ACCESS cohort, this thesis contributes novel data on the impact of the criminalization of HIV non-disclosure within a marginalized and otherwise criminalized group of PLWH who use illicit drugs. This group experience considerable social and structural barriers to HIV serostatus disclosure (71) and retention in HIV treatment and care (82, 136, 270-272), and have previously been poorly represented within the literature assessing the impacts of HIV non-disclosure criminalization (159). The findings that emerge from analyses conducted within this cohort highlight a critical lack of awareness of the legal obligation to disclose among marginalized and criminalized PLWH in Canada, and give weight to concerns that punitive approaches to curbing HIV incidence may compromise healthcare engagement, and jeopardise Treatment-as-Prevention initiatives among PLWH who use illicit drugs (15).

The manuscripts within this thesis contribute novel findings on the application, awareness and perceived healthcare impacts of HIV non-disclosure case law in the wake of the 2012 SCC ruling. This landmark ruling revised the legal test for HIV non-disclosure prosecutions, increasing the scope of criminal liability for HIV non-disclosure in Canada (90, 92). Analyses included within this thesis present timely evidence of suboptimal awareness and understanding of the legal obligation to disclose HIV status among WLWH in the wake of this ruling, and highlight the need for increased health and social care provider-led discussions around HIV disclosure and the law. Although this thesis primarily sought to determine awareness and perceived healthcare impacts of HIV non-disclosure case law among WLWH, two of the analyses were conducted using data from a mixed cohort of men and women living with HIV. As a result, this research was well positioned to identify important sex-based differences within the research objectives of this thesis. Notably, findings revealed women to be at increased risk of facing a legal obligation to disclose in the wake of the 2012 SCC ruling compared to men living with HIV. When considered in concert with evidence of gendered barriers to and challenges of HIV disclosure reported in the national and international literature (70, 71, 139, 182),

these findings support that WLWH may be at increased risk of prosecution compared to men in the current legal climate.

Notably, this research sought to capture opinions of WLWH around the preferred roles of health and social care providers in discussions about HIV disclosure and the law. Previous work in the Canadian context has identified compromised patient-provider trust and reduced openness during consultations with healthcare providers in the current legal climate (143, 144, 146). Similarly, interviews with healthcare providers have identified concerns that PLWH may avoid seeking information on HIV disclosure and the law from healthcare providers due to fear of HIV non-disclosure prosecutions (50). However, few studies have directly explored opinions of PLWH regarding the preferred role of health and social care providers in providing support and counselling in the current legal climate. Findings presented in this thesis support that health and social care providers represent a preferred information source around disclosure and the law, with women identifying HIV provider-led discussions around the law as a very important aspect of holistic health care. Given that the vast majority of WLWH engage with health and/or social care providers as part of their regular care, these findings suggest that the role of healthcare providers in raising patient awareness of the legal obligation to disclose, supported by close collaboration with legal services, should be further explored.

In conducting this doctoral research, considerable efforts were made to increase awareness of HIV disclosure and the law in the wake of the 2012 SCC ruling among participants, PRAs and front-line staff of the research teams. Training was conducted with research staff of the ACCESS study, and CHIWOS PRAs to ensure interviewers had an accurate understanding of the basics of the law, were able to accurately disseminate legal information to participants within their area of expertise, and were aware of reliable sources to which women could be referred if further information or legal advice was required. Additionally, a concise description of the legal obligation to disclose, based on the 2012 SCC ruling, was discussed with all ACCESS and CHIWOS participants who completed survey questions on the criminalization of HIV non-disclosure. This intervention was proposed to increase awareness of the legal obligation to disclose within the research community, and to equip study participants with

fundamental information to support informed sexual decision-making to avoid prosecution.

What truly sets this work apart from previous contributions in this field is that it was the result of a community-collaborative research process. The research was motivated by a community-identified need to raise awareness about the challenges of living with HIV and navigating healthcare engagement under the threat of HIV non-disclosure prosecutions, based on discussions with CHIWOS participants, peer researchers and members of the CHIWOS Community Advisory Board. Partnership with a Peer Research Associate and close collaboration with members of the CHIWOS peer network provided critical community and lived perspective on all aspects of the research. Importantly, community input was sought on the language, content and wording of the research questions to ensure priorities and concerns of WLWH were captured within the research, and to guarantee that the safety and respect of WLWH was prioritised. Employing community-collaborative methodology yielded research conducted by, for, and with WLWH, which raises awareness of the challenges of navigating healthcare engagement in the current legal climate, and advocates for community-driven strategies to limit harms incurred by the criminalization of HIV non-disclosure. Moving forward, these strong community partnerships will facilitate knowledge translation and dissemination of these findings within the wider community that this research aims to serve.

6.4. Recommendations

Despite a growing body of scientific evidence and numerous critical commentaries exposing the harmful impacts incurred through the criminalization of HIV non-disclosure, the use of criminal law against PLWH in Canada shows all signs of continuing (321). While we remain at this impasse, the implementation of evidence-based interventions to mitigate the harms of HIV non-disclosure case law on women's health and rights is critical.

In the current legal climate, women have a right to accurate, comprehensive, culturally appropriate and accessible information on HIV disclosure and the law, free

from judgement. This thesis identified a high level of trust between WLWH and HIV physicians, and healthcare providers emerged as a preferred source of information around HIV disclosure and the law. However, in light of suboptimal awareness of the 2012 SCC ruling and limited provider-led discussions about HIV disclosure and the law, there is a clear need to establish comprehensive, rights-based, best-practice guidelines to delineate the professional roles and responsibilities of health and social care providers working with WLWH under competing tensions of public health and criminal justice systems. Such guidelines could play a critical role in enhancing accurate information sharing about HIV disclosure and the law, and promoting a healthcare environment that prioritises women's rights to privacy, information, health, and dignity.

Guidelines for clinical care in the current legal climate should strive to educate healthcare providers on HIV non-disclosure case law to ensure they have the necessary information to provide accurate, non-judgemental legal information to WLWH during clinical consultations, without surpassing their area of expertise. Guidelines should acknowledge the professional and legal complexities that may arise in provider-led discussions about HIV disclosure and the law, and clearly delineate the limits of the scope and competence of healthcare providers to engage in discussions of this nature. It is important to acknowledge that trained legal professionals are perhaps best situated to provide accurate, comprehensive information about HIV disclosure and the law to PLWH. Given the possibility that healthcare records may be subject to subpoena in cases where episodes of HIV non-disclosure are alleged, the guidelines should stress the value of enhanced communication between legal services and healthcare providers when engaging in discussions on HIV disclosure and the law in clinical settings, advising a low threshold for healthcare provider referrals to trained legal professionals to maximise patient safety and confidentiality.

Generating best-practice guidelines for clinical care in the current legal climate would require institutional leadership and collaboration between WLWH, health bodies, clinicians, researchers, community service providers, and legal agencies. Through the formation of working groups, emphasis must be placed on ensuring that guidelines are sensitive to the information needs and priorities of the community, and reflect best-practice in clinical care and the current legal context. Guidelines should be informed by

recommendations produced in other international settings (295), guidance produced by community and clinical organisations and legal agencies in Canada (287-291), and recommendations from public health experts (224, 292).

Advancing activism and advocacy around the criminalization of HIV non-disclosure through community leadership is critical to raise awareness and provoke an empowered community-driven discourse around how to advance health and rights of WLWH under the threat of HIV non-disclosure prosecutions. Findings from this thesis support that community organisations and peer networks are important channels through which information about HIV disclosure and the law is accessed in the current legal climate. Supporting accurate information sharing about HIV disclosure and the law should be advanced across peer networks and in community settings through educational webinars, knowledge sharing sessions, or dissemination of information brochures targeted to the local community (276, 312, 313). To this end, considerable efforts have already been made within community organisations (276, 290, 312, 313), however women-specific HIV services may encounter challenges when engaging in discussions about HIV disclosure and the law with WLWH, driven by intersecting vulnerabilities of violence and stigma, poor literacy and language barriers, and cultural and sexual norms (202). Further groundwork is indicated to expand the accuracy and reach of community-driven knowledge dissemination, catering to the diverse identities and experiences of WLWH in Canada. This process must involve meaningful partnerships with members of marginalized WLWH, and close collaboration with the Canadian HIV/AIDS Legal Network, an organization that has a tremendous record of advocacy in this field and disseminates clear, accurate guidance on the criminalization of HIV non-disclosure in Canada (85). Efforts should be informed by existing guidance on the work of community organizations in the current legal climate (287, 288, 290). Given the evidence to suggest that vulnerable WLWH who use illicit drugs have suboptimal awareness of the legal obligation to disclose, combining education around HIV disclosure and the law in pre-established harm reduction spaces, that are designed to be safe spaces for WLWH who use drugs, may be of considerable value.

While the use of criminal law against PLWH in Canada continues, legal avenues for harm reduction must also be explored to advance the safety and rights of WLWH.

The development of prosecutorial or charge assessment guidelines has been identified as a means to prevent inappropriate prosecutions, and promote suitable consideration of modern scientific theory, public health and human rights in the criminal justice system (322-325). Prosecutorial guidelines may help to mitigate harms of non-disclosure prosecutions by cautioning against pursuing cases involving vulnerable women, particularly in the context of gender-based violence, by encouraging fair trials where the privacy of PLWH is upheld and stigmatizing and discriminatory conduct is impeded, and by preventing misinformation around HIV transmission (323, 326). Prosecutorial guidelines have been successfully implemented in England, Wales and Scotland to limit prosecutorial discretion in the use of criminal law against PLWH (327, 328). In this setting, charge assessment guidelines have been deemed an effective harm-reduction strategy, leading to fairer and reduced prosecutions (329).

In Canada, preliminary attempts have been made to initiate a dialogue articulating the need for prosecutorial guidelines. A campaign was launched in 2010 by the Ontario Working Group on Criminal Law and HIV Exposure, a collective of PLWH and representatives from ASOs, appealing for the development of prosecutorial guidelines (324, 330). While the Ministry of the Attorney General in Ontario responded to this campaign by promising the development of guidelines, no official documentation has yet been published (330). More recently, the Canadian HIV/AIDS Legal Network called for the development of guidelines to inform police conduct during HIV non-disclosure prosecutions in a document presented to the Ontario Association of Chiefs of Police Diversity Committee (331). In BC, the community-based organisation Positive Living published a position statement in 2014 calling for new charge assessment guidelines for cases of HIV non-disclosure within the province (323). This position statement has been instrumental in opening channels of communication between community advocates and the Office of the Federal Justice Minister around the harms of HIV non-disclosure criminalization for PLWH in Canada.

The process of conducting this research revealed a lack of guidance to inform best-practice in conducting legally sensitive research on the criminalization of HIV non-disclosure, as has previously been demonstrated in other legally sensitive fields of research (332). Conducting research of this nature can present ethical and legal

tensions. The data collection process may require participants to share legally sensitive information with researchers, which relies upon a guarantee of confidentiality and trust, which may be compromised due to fear of exposure of confidential information in the current legal context (143-146). The privacy and confidentiality of individuals participating in health research has been previously called into question by the Canadian Criminal Justice System. In 1994, the Vancouver Coroner issued a subpoena ordering graduate student Russel Ogden to disclose details of his research on assisted suicide, which resulted in a legal battle to protect the confidentiality of his research participants (333, 334). More recently, in 2014, the Quebec Superior Court recognized a qualified privilege in the case of Dr. Colette Parent and Dr. Christine Bruckert vs. Her Majesty the Queen and Luka Rocco Magnotta; representing a further positive ruling for the Canadian health research community (334, 335). Given the challenges that emerge in conducting research in this legally sensitive and emotionally triggering field, there is a clear need for community-collaborative dialogue to inform research strategies that prioritise the safety, health and rights of research participants. The development of interdisciplinary, community-led consensus guidance for conducting ethically sound research on the criminalization of HIV non-disclosure would maximize the quality and integrity of research, while protecting the privacy and safety of study participants. Critically, this would also help to avert any silencing of important research in this field. This process would require interdisciplinary collaboration between ethics boards, legal agencies, researchers and community. Including knowledge users in the design of the guidelines will promote a greater uptake and integration into community-engaged research proposals across Canada.

6.5. Future Research

In light of the findings presented in this thesis, there are a number of priority areas for future research in this field. This thesis shows that conducting research on a national scale is critical to appreciate the diverse and intersecting identities of WLWH across different regions (100). Future women-centered research in this field should incorporate the Prairie provinces of Saskatchewan and Manitoba, where HIV incidence has been escalating in recent years, with Indigenous women disproportionately affected (336-338).

CHIWOS recruitment is expanding to include WLWH in Manitoba and Saskatchewan with the next iteration of data collection, which will provide an ideal platform to launch community-based research initiatives in these settings. Longitudinal cohort data would also be of considerable value in this field of research, to investigate how awareness, experiences, opinions and impacts of the criminalization of HIV non-disclosure vary over time, in response to the changing landscape of HIV treatment and prevention, highly publicised non-disclosure prosecutions, changes in the application of criminal law against PLWH, or expanding awareness of HIV non-disclosure case law in community settings.

While the research presented in this thesis presents some evidence to suggest that the criminalization of HIV non-disclosure represents a barrier to the healthcare engagement of WLWH in Canada, this research explores hypothetical rather than personal impacts of HIV non-disclosure criminalization on healthcare engagement, limiting our ability to present the most robust evidence for policy change in this field. Moving forward, the wave 3 CHIWOS survey will include questions exploring the direct personal impact of HIV non-disclosure criminalization on healthcare engagement and provider trust to further explore this important area of research and strengthen our evidence to promote changes to policy and practice to promote the health and rights of WLWH. These next steps will build upon the strong foundation of participant-researcher trust that was fostered within the CHIWOS study by incorporating sensitive, community-driven questions about the criminalization of HIV non-disclosure in the wave 2 survey. Novel questions will be devised and developed in collaboration with community partners and legal experts to ensure participant safety and comfort is prioritised.

Future research should seek to evaluate clinical practices of health and social care providers working with WLWH in the current legal climate. Specifically, this work should explore providers' perceived roles in disseminating information around HIV disclosure and the law to WLWH, identify perceived barriers to discussing HIV disclosure and the law in the healthcare setting, and elicit strategies to improve rights-based, women-centred HIV care for WLWH in the current legal context. While work of this nature has previously been conducted among health and social care providers in Canada (143, 224), no research has specifically evaluated the practices of healthcare

providers caring for WLWH. There is an urgent need for women-centered research of this nature, given gendered challenges of navigating health and social care in the context of HIV non-disclosure prosecutions (159), unique sexual and reproductive healthcare needs of WLWH (73), and the potential risk of prosecution for mother-to-child transmission (231). Previous work has shown that experiences of healthcare engagement during pregnancy and motherhood may be negatively shaped by the threat of HIV non-disclosure prosecutions, and by perceived surveillance from public, health and legal bodies (75, 76, 140). Findings generated from this research would be used to inform evidence-based, strategies to better support women and mothers living with HIV and engaging with healthcare services in the current legal context.

Another priority for future research in this area is identifying the optimal time for discussions around HIV disclosure and the law in healthcare settings. This work could consider whether counselling on HIV disclosure and the law should be conducted prior to HIV testing, or should represent part of routine HIV treatment and care. Previous work has suggested that discussions about HIV disclosure and the law during pre-test counselling may represent an unacceptable barrier to HIV testing (339). Other work has advised promoting awareness of the legal obligation to disclose among newly diagnosed individuals, immediately following the receipt of an HIV positive diagnosis, in order to immediately provide PLWH with the fundamental information to make informed sexual choices and avoid prosecution (159). Such is the approach recommended in current testing guidelines published by the provinces of Ontario (340) and BC (341). Immediately after receiving a positive diagnosis, however, a newly diagnosed individual may be in a compromised state to adequately absorb this information, and evaluate the implications. If such discussions are delayed until a patient presents for routine healthcare visits after an HIV diagnosis, medical concerns will be prioritised within the limited time period of clinical consultations, which may leave little or no time for discussions about HIV disclosure and the law. Research regarding optimal timing for discussions about non-disclosure case law should capture the views of both providers and PLWH, and could inform community-collaborative guidelines on optimal strategies for counselling on HIV disclosure and the law.

Qualitative work is warranted to further enrich and contextualize quantitative research findings identified in this thesis. Through completing this doctoral research, the candidate became a co-investigator and member of the BC research team of the CIHR-funded, community-collaborative Women, Art, and the Criminalization of HIV non-disclosure (WATCH) study. This research project unites a national team of health researchers, clinicians, social workers, WLWH and community workers to explore how increased social, legal and public health surveillance driven by the criminalization of HIV non-disclosure impacts the lives and health and social care experiences of WLWH in BC, Saskatchewan and Ontario. This work will enrich findings identified in this thesis by capturing the voices of diverse WLWH across Canada using body-mapping methodology.

Future scholarship in this field should also seek to consider how navigating sexual relationships under competing priorities of Treatment-as-Prevention and the criminalization of HIV non-disclosure impacts women's sexual health and rights. With accumulating evidence that the risk of sexual HIV transmission approaches zero when ART-related viral suppression is achieved by the partner living with HIV (10, 14, 98), researchers have suggested that ART-related viral suppression may constitute a form of safer sex (285), offering some women another option by which to minimize HIV transmission risk. Previous work has shown that awareness of the prevention benefits of ART-related viral suppression is positively associated with condomless sex (342). However, the threat of HIV non-disclosure charges may compromise the sexual rights of WLWH and limit the realization of prospects for healthy sexuality that should be afforded to them through access to ART. Thus, future research efforts should seek to identify how women's sexual and reproductive decision-making is influenced by living under the threat of HIV non-disclosure prosecutions. Findings would inform efforts to advocate for strategies to support safe, satisfying sexual decision-making among WLWH navigating satisfying intimate partnerships under competing priorities of Treatment-as-Prevention and the criminalization of HIV non-disclosure.

Finally, researchers conducting work in this field should strive to incorporate rights-based, community-collaborative methodology to foster meaningful research partnerships with the community that the research aims to serve, and to advance peer

leadership within the research process (343). In the current legal context, WLWH experience perceived surveillance from society, public health and legal bodies (76, 140), and research has the potential to represent a further mechanism of surveillance. The involvement of peers in the research process provides the community with a voice to raise concerns, and ensure that the priorities, safety and respect of WLWH are upheld throughout the research process. Above all, meaningful collaborations with community members advance the engagement, awareness, and empowerment of WLWH, inspiring action and activism on this issue within the wider community to advance health and rights.

6.6. Conclusion

This doctoral thesis represents an important and timely contribution to the emergent literature, providing novel evidence of how the criminalization of HIV non-disclosure can impact the health and rights of WLWH in Canada, who experience key gendered barriers to HIV status disclosure and sustained engagement in the cascade of HIV care. A key thread that emerged through this research is that intersectionality of social identities and vulnerabilities among Canadian WLWH shapes the awareness and experiences of HIV non-disclosure case law. Findings suggest that in the wake of a stricter legal precedent for HV non-disclosure prosecutions in Canada, marginalized WLWH may face an increased risk of prosecution compared to men, driven by inconsistent condom use and suboptimal treatment outcomes. Results generated by this thesis highlight that awareness and understanding of the legal obligation to disclose to sexual partners is suboptimal, particularly among WLWH who are most vulnerable and marginalized. Although most participants captured within these analyses were engaged with HIV treatment and care, discussions about HIV disclosure and the law were notably lacking in healthcare settings, despite WLWH identifying a willingness and desire to engage in discussions of this nature with healthcare providers. Furthermore, these findings reinforce concerns that HIV non-disclosure case law may limit the type of information WLWH are willing to share with healthcare providers, which may in turn compromise effective healthcare engagement in the current legal climate.

This research identifies an urgent need to identify strategies to safely disseminate clear and accurate information about HIV disclosure and the law to WLWH in community and healthcare settings in the wake of the 2012 SCC ruling, supported by strong connections to legal services. In the context of increased clinical surveillance of WLWH through routine HIV testing (238), and viral load monitoring (21) to meet ambitious United Nations treatment targets (19, 21), it is critical that the health and social care provision for WLWH remains holistic and rights-based, to ensure women have access to fundamental information, not only to protect their sexual partners from HIV acquisition, but also to optimise their health and rights in the current legal climate. Supporting the meaningful involvement of WLWH in research around the criminalization of HIV non-disclosure is important to further community empowerment and to ensure women's priorities remain at the forefront of research agenda and policy making to advance meaningful change.

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Appendix A

ACCESS Criminalization of HIV Non-Disclosure Supplemental Questionnaire

We are going to ask you some questions about the current Canadian legal position relating to the disclosure of HIV status to sexual partners. There are a number of concerns about how these laws may affect people living with HIV. We hope that this questionnaire will capture how the laws affect people living with HIV, and provide evidence to advocate for your health and rights. Most importantly, we want to assure you that the information you share in completing this questionnaire is strictly confidential. By asking these questions we are not suggesting that you have to disclose your HIV status to your sexual partners, or change what you currently do.

1. In 2012 the Supreme Court made a decision about the legal requirements and conditions under which a person living with HIV has to disclose his/her HIV status to sexual partners. Are you aware of this decision?

   Yes (Read below.)

   No (Read below. Then skip to 5.)

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 181 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 or more may face a criminal charge of aggravated sexual assault for not telling their sexual partners they have HIV.

To clarify, the revised laws say that people living with HIV are <u>legally</u> required to disclose their HIV status to sex partners UNLESS they use a condom <u>AND</u> have a viral load less than 1500 copies/ml.

2. How similar is this definition to what you had previously understood about the laws relating to HIV disclosure? Read out the list. Check one only.

   The same

   Mostly the same

Mostly different

Completely different

3. From which sources have you learned about the revised laws relating to HIV disclosure? Read out the list. Check all that apply.

Health care providers

AIDS service organizations

Service providers not part of an AIDS service organization

Friends/peers

Newspapers/media outlets

Canadian HIV/AIDS legal network

Other:

4. Have any of the following healthcare providers talked to you about the revised laws relating to HIV disclosure, including the relevance of condom use and viral load? Read out the list. Check all that apply.

HIV physician

General practitioner/family doctor

Methadone doctor

Nursing staff

VIDUS Staff/research staff

Counsellor

Social Worker

Peer worker

Case manager

Community worker / Insite staff

Other:

5. Which of the following healthcare providers would you feel comfortable talking to about concerns or questions that you may have about the revised laws relating to HIV disclosure? Read out the list. Check all that apply.

Regular HIV physician

Regular General practitioner/family doctor

Regular methadone doctor

A doctor who is not your regular health provider

Nursing staff

VIDUS staff

Counsellor

Social Worker

Peer worker

Case manager

Community worker / Insite staff

Other:

None of these healthcare providers.

6. Please indicate to what degree you agree or disagree with the following statement: "The revised laws relating to HIV disclosure might affect the type of information that people living with HIV would be willing to share with their healthcare provider, such as information about sexual activities and HIV disclosure". Read out the list. Check one only.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Other, please specify

7. Please indicate to what degree you agree or disagree with the following statement: "The revised laws relating to HIV disclosure make people living with HIV more likely to disclose their HIV status to new sexual partners" Read out the list. Check one only.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Other, please specify

8. Do you know someone living with HIV who has chosen not to have sex with a new partner due to concerns about HIV disclosure and the legal risks that non-disclosure might present? Check one only.

Yes

No

9. Do you know someone who has been charged or threatened with a charge of HIV non-disclosure (not disclosing their HIV status to a person they had sex with)? Check one only.

Yes

No

10. Please indicate to what degree you agree or disagree with the following statement: “I am satisfied with the support services currently available in my community to help people living with HIV navigate HIV disclosure to sexual partners.” Read out the list. Check one only.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Other, please specify

Appendix B

CHIWOS survey questions exploring the criminalization of HIV non-disclosure in Canada[4].

We are going to ask you some questions about the current Canadian law related to HIV status disclosure to sexual partners. There are a number of concerns about how these laws may affect women living with HIV. By asking the following questions, we hope to provide evidence to advocate for your health and rights. The information you share is strictly confidential.

1. In 2012, the Supreme Court of Canada 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? Select one.

Yes	(Read below, continue to 2)
No	(Read below, skip to 5)
Don`t know	(Read below, skip to 5)
Prefer not to answer	(Read below, skip to 5)

Follow with brief explanation of the case law (below), no matter how the participant responds to question 1.

In Canada, people living with HIV can 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. In 2012, the Supreme Court of Canada ruled that people living with HIV must disclose their HIV status to a sexual partner before having sex unless they use condoms AND have a viral load of 1500 copies/ml or less. People who do not meet these criteria can face a criminal charge of aggravated sexual assault if they do not tell their sexual partners they have HIV. To summarize, 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.

2. How similar is this definition to what you thought you understood about HIV disclosure and the law in Canada? Select one.

   The same

   Mostly the same

   Mostly different

   Completely different

[4] Full CHIWOS data collection instrument available online at: http://www.chiwos.ca/chiwos-study/chiwos-documents/?lang=en

Don’t know

Prefer not to answer

3. From which sources have you learned about HIV disclosure and the law? Select all that apply.

Health care providers

AIDS service organizations

Service providers not part of an AIDS service organization

Friends/peers

Newspapers/media outlets

Canadian HIV/AIDS legal network

PRA (Peer research associate)

Other, please specify:

Don’t know

Prefer not to answer

4. Have any of the following healthcare providers talked to you about HIV disclosure and the law, including the relevance of condom use and viral load? Select all that apply.

HIV physician

General practitioner/family doctor

Nursing staff

Counsellor

Social Worker

Peer worker

Case manager

Community worker

Other, please specify:

No healthcare providers have talked to me about the HIV disclosure and the law

Don't know

Prefer not to answer

5. Which of the following healthcare providers would you feel comfortable talking to about concerns or questions that you may have about HIV disclosure and the law in Canada? Select all that apply

    Regular HIV physician

    Regular general practitioner/family doctor

    A doctor who is not your regular health provider

    Nursing staff

    Counsellor

    Social Worker

    Peer worker

    Case manager

    Community worker

    Other, please specify:

    None of these healthcare providers

    I have no concerns or questions about HIV disclosure and the law

    Don`t know

    Prefer not to answer

6. Please indicate to what degree you agree or disagree with the following statement: “HIV disclosure laws might affect the type of information that women living with HIV would be willing to share with their healthcare providers, such as information about sexual activities and HIV disclosure”. Select one.

    Strongly agree

    Agree

    Neutral

    Disagree

    Strongly disagree

    Other, please specify:

    Don`t know

    Prefer not to answer

7. Please indicate to what degree you agree or disagree with the following statement: “I am satisfied with the support services currently available in my community to help women living with HIV deal with HIV disclosure to sexual partners.” Select one.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

Other, please specify:

Don`t know

Prefer not to answer

8. Do you know someone who has been charged or threatened with a charge of HIV non-disclosure (not disclosing their HIV status to a person they had sex with)? Select one.

Yes

No

Don't know

Prefer not to answer