

# Sexual and Reproductive Health Outcomes among Incarcerated Women in Canada: A Scoping Review

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## Abstract

**Background:** Women are the fastest growing population in Canadian prisons. Incarceration can limit access to essential health services, increase health risks and disrupt treatment and supports. Despite legal requirements to provide care at professionally accepted standards, evidence suggests imprisonment undermines sexual and reproductive health. This scoping review asks, “What is known about the sexual and reproductive health of people incarcerated in prisons for women in Canada?”

**Methods:** We use the Joanna Briggs Institute methodology for systematic scoping reviews. Databases searched include MEDLINE, CINAHL, PsycINFO, Gender Studies Abstracts, Google Scholar and Proquest Dissertations and grey literature. The search yielded 1424 titles and abstracts of which 15 met the criteria for inclusion.

**Results:** Conducted from 1994–2020, in provincial facilities in Ontario, British Columbia, Alberta and Quebec as well as federal prisons, the 15 studies included qualitative, quantitative and mixed methods. The most common outcomes of interest were related to HIV. Other outcomes studied included Papanicolaou (Pap) and sexually transmitted infection (STI) testing, contraception, pregnancy, birth/neonatal outcomes, and sexual assault.

**Conclusion:** Incarceration results in lack of access to basic services including contraception and prenatal care. Legal obligations to provide sexual and reproductive health services at professionally acceptable standards appear unmet. Incarceration impedes rights of incarcerated people to sexual and reproductive health.

## Keywords

Prison, sexual health, reproductive health, scoping review

## Rationale

At 112 people per 1,00,000 Canada has one of the highest rates of incarceration in the western world and women are the fastest-growing incarcerated population (World Prison Brief, 2020). The population of people in prisons for women increased 32.5% from 2009 to 2019 (Canadian Friends Service Committee, 2019). The increasing incarceration of women increases needs for sexual and reproductive health care from prison health services. The absolute numbers of women experiencing incarceration are relatively small: women represent 7% of the 14,742 people in federal prisons and 16% of the 25,405 people in provincial custody (Reitano, 2017).

As a small subpopulation, the sexual and reproductive health service needs of women, trans and nonbinary

people may be crowded out by those of the much larger populations of men. In a 2015 scoping review of Canadian prisoner health, Kouyoumdjian et al. found 86 of the 194 studies included only male participants,

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and in another 35 studies, more than 2/3 of participants were male. Although women are named as a focal population for the OCI, the office has only published one recent study focused on the health of women, and it examined factors associated with self-harm. Correctional Service of Canada has never published a study about sexual or reproductive health.

Colonialism and racism are foundational to Canadian systems of policing, justice and corrections. In both the federal and provincial/territorial systems, Indigenous women are significantly over-represented: 42% of women admitted to provincial/territorial facilities are Indigenous (Malakieh, 2019), and 41.4% of women in federal prisons are Indigenous (OCI, 2020). In Canada, Indigenous groups include First Nations, Inuit and Metis (Canada, 2017). The population of Indigenous women in provincial/territorial facilities varies from 76% in Saskatchewan to 5% in Quebec (Reitano, 2017). The number of Indigenous women detained in the federal system rose 60.7% from 2008–2018 (Public Safety Canada, 2019). Indigenous people are disproportionately likely to receive sentences at higher (medium and maximum) levels of security (Public Safety Canada, 2019), where it is less possible to participate in programming and access services.

The *Corrections and Conditional Release Act* (Canada, 1992) sets out the legal requirements that the federal prison system provide health services at professionally accepted standards of practice. Health service delivery is organized under the Correctional Service Canada's (CSC) *Commissioner's Directive 800* (CSC, 2015). Health care staff are employed by the same body as correctional officers, namely CSC, and comprise 7% of CSC's 17,000 employees (Office of the Parliamentary Budget Officer, 2018). In the provinces and territories, the state is responsible for the health of incarcerated people, however health services for people in carceral facilities may fall under Justice or Health portfolios.

The United Nations Office on Drugs and Crime (UNODC) *Rules for the Treatment of Women Prisoners and Non-custodial Measures for Women Offenders*, known as the *Bangkok Rules* (UNODC, 2011) stipulate international requirements pertaining to women's sexual and reproductive health. Bangkok Rule 6 specifies:

The health screening of women prisoners shall include comprehensive screening to determine primary health-care needs, and also shall determine: (a) The presence of sexually transmitted diseases or blood-borne diseases. . .(b) Mental health-care needs. . .(c) The reproductive health history of the woman prisoner, including current or recent pregnancies, childbirth and any related

reproductive health issues; (d) The existence of drug dependency; (e) Sexual abuse and other forms of violence that may have been suffered prior to admission. (UNODC, 2011, p. 9)

Rule 10 stipulates that "Gender-specific health-care services at least equivalent to those available in the community shall be provided to women prisoners" (UNODC, 2011, p. 10). Rule 17 states that "Women prisoners shall receive education and information about preventive health-care measures, including on HIV, sexually transmitted diseases and other blood-borne diseases, as well as gender-specific health conditions" (UNODC, 2011, p. 11). Rule 18 specifies "Preventive health-care measures of particular relevance to women, such as Papanicolaou tests and screening for breast and gynaecological cancer, shall be offered to women prisoners on an equal basis with women of the same age in the community" (UNODC, 2011, p. 11). Rule 47 states "Pregnant or breastfeeding women prisoners shall receive advice on their health and diet under a programme to be drawn up and monitored by a qualified health practitioner" (UNODC, 2011, p. 16).

The UNODC *Standard Minimum Rules for the Treatment of Prisoners*, known as the *Mandela Rules* (UNODC, 2015) also include international requirements for maternal health care. These include Rule 28, which states "In women's prisons, there shall be special accommodation for all necessary prenatal and postnatal care and treatment" (UNODC, 2015, p. 9) and Rule 48 "Instruments of restraint shall never be used on women during labour, during childbirth and immediately after childbirth" (UNODC, 2015, p. 15).

Pretrial incarceration and brief sentences are highly disruptive to the lives of people experiencing criminalization (Pelvin, 2019), and may impact continuity in health service use, housing, employment, and family (Elwood Martin et al., 2009). Most people in prison in Canada are in the provincial/territorial systems, where over two-thirds of prisoners are remanded to custody before trial (Reitano, 2017). Their average length of stay is one week (Malakieh, 2019). One third of those who are *sentenced* to provincial prisons spend less than a week in custody (Malakieh, 2019). In general, women spend less time in remand and sentenced custody than men (Malakieh, 2019). People in federal prisons have received a conviction and sentence for two years or more. Of these, approximately half will serve less than five years in custody (Public Safety Canada, 2018).

Some authors suggest improving prison health services would support incarceration as an opportunity for people to focus on their health (McLeod & Elwood

Martin, 2018). Health care provision within carceral settings is fraught with the ethical dilemma of dual loyalty to patients and prison authorities (Pont et al., 2012). Furthermore, the “revolving door” (Padfield & Maruna, 2006) of incarceration poses logistical problems to health and rehabilitation service provision within carceral institutions.

Health-related matters are the most common type of complaint to the OCI(2019), the watchdog for federal prison services. Incarcerated people are disproportionately likely to experience structural determinants of ill health such as poverty, low educational attainment, unemployment, and racism (Public Safety Canada, 2018). Incarceration itself can be framed as a social-structural determinant of health (Brinkley-Rubenstein & Cloud, 2020). Risks to health during incarceration include violence, segregation, and disciplinary sanctions in response to health experiences such as mental illness and substance use disorder (OCI, 2020). The experience of incarceration impacts health outcomes including physical wellbeing, mental health, infection, injury and pain (Kouyoumdjian et al., 2016).

Sexual and reproductive health is a dominant area of health service use for women and people with a uterus. Indeed, it is a broad concept:

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. (World Health Organization, n. d., p. 1)

Birth is the most common reason for hospitalization in Canada (Canadian Institute for Health Information (CIHI), 2020). Approximately 75% of Canadians have Human Papilloma Viruses (HPV), sexually transmitted infections that cannot be cured and are the cause of genital lesions and several types of cancers (Action Canada, 2020). An estimated 60% of women over the age of 18 have primary dysmenorrhea (painful periods) (Burnett et al., 2005). The prevalence of sexual assault among women in the general population is 30% (Cotter & Savage, 2019). For people in prisons for women, lack of adequate sexual and reproductive health care can result in significant harm.

Given the increasing population in prisons for women in Canada, the legal requirements to provide adequate health services to women in prison, and the sparsity of

knowledge about the health of this population, In this scoping review we asked, “What is known about the sexual and reproductive health of people incarcerated in prisons for women in Canada?” This knowledge will be used to inform future research priorities, policy governing the health services for people experiencing incarceration, health care providers’ practice when caring for this population, and the development of interventions to address the needs of this population.

## Methods

We conducted a scoping review following Joanna Briggs Institute (JBI) (Peters et al., 2020) methodology. The protocol for this review was not registered. The population of interest was women experiencing incarceration. The concept of interest was sexual and reproductive health, very broadly defined, including sexually transmitted infections; contraception; pregnancy rates, intentions and complications; birth; maternal health; sexual assault; reproductive mental health, etc. The context was incarceration in Canadian prisons.

### *Inclusion criteria*

This scoping review included studies with participants who were or had been incarcerated in provincial, territorial and federal prisons for women in Canada and whose sex and or gender was identified as female, trans or non binary.

### *Exclusion criteria*

This review excluded studies conducted only with people in prisons for men. As the focus on this review and the key words addressed health, we did not consider studies that examined outcomes not described as health related. We did not include review articles, commentaries or editorials and excluded all publications not available in full text in English or published prior to 1992.

### *Search strategy*

We used a JBI method which includes a three-step comprehensive search strategy to find both published and unpublished studies: First, an experienced clinical librarian led a limited search of MEDLINE and CINAHL using keywords. She analysed the text in the titles/abstracts and index terms to develop a tailored search strategy for each information source. Keywords included: carceral, penal, custod\*, jail, prison\*, incarcerat\*, correction\*, penitentiary\*, detention, inmate\*, offender\*; health; women, woman; Canada and the names of each of the provinces and territories.

Secondly, databases were searched using the keywords and index terms identified from the initial limited search. The databases we searched included:

MEDLINE  
CINAHL  
PsycINFO  
Gender Studies Abstracts.

The search for unpublished studies included:

Internet search of reports published by Corrections Services Canada (CSC) and the Office of the Correctional Investigator of Canada (OCI)  
Google Scholar (first 100 citations)  
ProQuest dissertations.

A full search strategy for CINAHL is detailed in Appendix. Lastly, to help identify any additional studies, the reference lists of all literature meeting the inclusion criteria of this review were examined for potentially relevant studies. The JBI method for scoping reviews does not include quality assessment of the studies and as such this was not performed.

### Study selection

Following the search, all identified citations were collated and uploaded into Covidence (Covidence systematic review software, 2020). Duplicates were identified and deleted. Two reviewers independently screened the titles and abstracts for assessment against the inclusion and exclusion criteria. Titles and abstracts that met the inclusion criteria were retrieved in full and assessed by two independent reviewers using the inclusion criteria. Where any conflicts occurred, a third reviewer was available to assist. Full text studies that did not meet the inclusion criteria were excluded.

The search strategy retrieved 1424 hits. Removal of 144 duplicates resulted in 1280 articles for title and abstract review. Two reviewers independently screened articles to identify those eligible for full-text review. Sixty-six articles were included for full-text review, of which 15 met the inclusion criteria (PRISMA Figure 1). Reasons for exclusion of 51 articles included: Not focused on sexual or reproductive health outcomes (33); Not research (8); Not the population of interest (3); Duplicate (2); Outside the date range (2); Not the setting of interest (2); Not an included study design (1). Please see PRISMA diagram below, developed from Moher et al. (2009).

### Data extraction

Data were extracted from included papers using Excel. The items extracted from the full text included study

characteristics (e.g., year of publication, province), number and types of participants and controls where appropriate, aim, study design and methods, sexual and reproductive health outcomes and results (see Table 1). Any disagreements that arose between the reviewers during data extraction were resolved through discussion.

## Results

### Study characteristics

The 15 studies were published between 1994 and 2020. The settings included five studies in provincial prisons for women in Ontario (Burchell et al., 2003; Carter Ramirez et al., 2020a, 2020b; Kouyoumdjian et al., 2018; Liauw et al., 2016); three in British Columbia (Elwood Martin, 2000; Elwood Martin et al., 2004, Rotheron et al., 1994); two in Quebec (Dufour et al., 1996; Hankins et al., 1994) and one in Alberta (Besney et al., 2018). One paper was set in selected federal prisons for women (Ford, 1995); one included data from all the federal prisons for women (De et al., 2004), one included a small group of formerly incarcerated women who had been incarcerated in both federal and provincial facilities (Hutchison, 2020), and one included formerly-incarcerated people living with HIV in Ontario, BC and Quebec (Gormley et al., 2020). Only Gormley et al. (2020) specified that the participants included trans and non-binary people, and Hutchison (2020) specified that all five participants identified as cisgender women.

Study designs included 13 quantitative studies (Burchell et al., 2003; Carter Ramirez et al., 2020a, 2020b; De et al., 2004; Dufour et al., 1996; Elwood Martin, 2000; Elwood Martin et al., 2004; Ford, 1995; Gormley et al., 2020; Hankins et al., 1994; Kouyoumdjian et al., 2018; Liauw et al., 2016; Rotheron et al., 1994), one mixed methods (Besney et al., 2018) and one qualitative (Hutchison, 2020). Sample sizes varied from 5 (Hutchison, 2020) to over 8,000,000 (Carter Ramirez et al., 2020a, 2020b). Four studies included men and women participants, all four of which addressed HIV (Burchell et al., 2003; De et al., 2004; Dufour et al., 1996; Rotheron et al., 1994).

Several papers addressed more than one reproductive health outcome (Table 1). Seven studies examined HIV (Burchell et al., 2003; De et al., 2004; Dufour et al., 1996; Ford, 1995; Gormley et al., 2020; Hankins et al., 1994; Rotheron et al., 1994); four addressed Pap testing/cervical cancer screening (Besney et al., 2018; Elwood Martin, 2000; Elwood Martin et al., 2004; Kouyoumdjian et al., 2018); three studies looked at pregnancy or contraception (Besney et al., 2018; Carter Ramirez et al., 2020b; Liauw et al., 2016); one examined birth and neonatal outcomes (Carter Ramirez et al., 2020a); one addressed STIs (in addition to HIV) (Besney et al., 2018); and one addressed sexual assault (Hutchison, 2020).

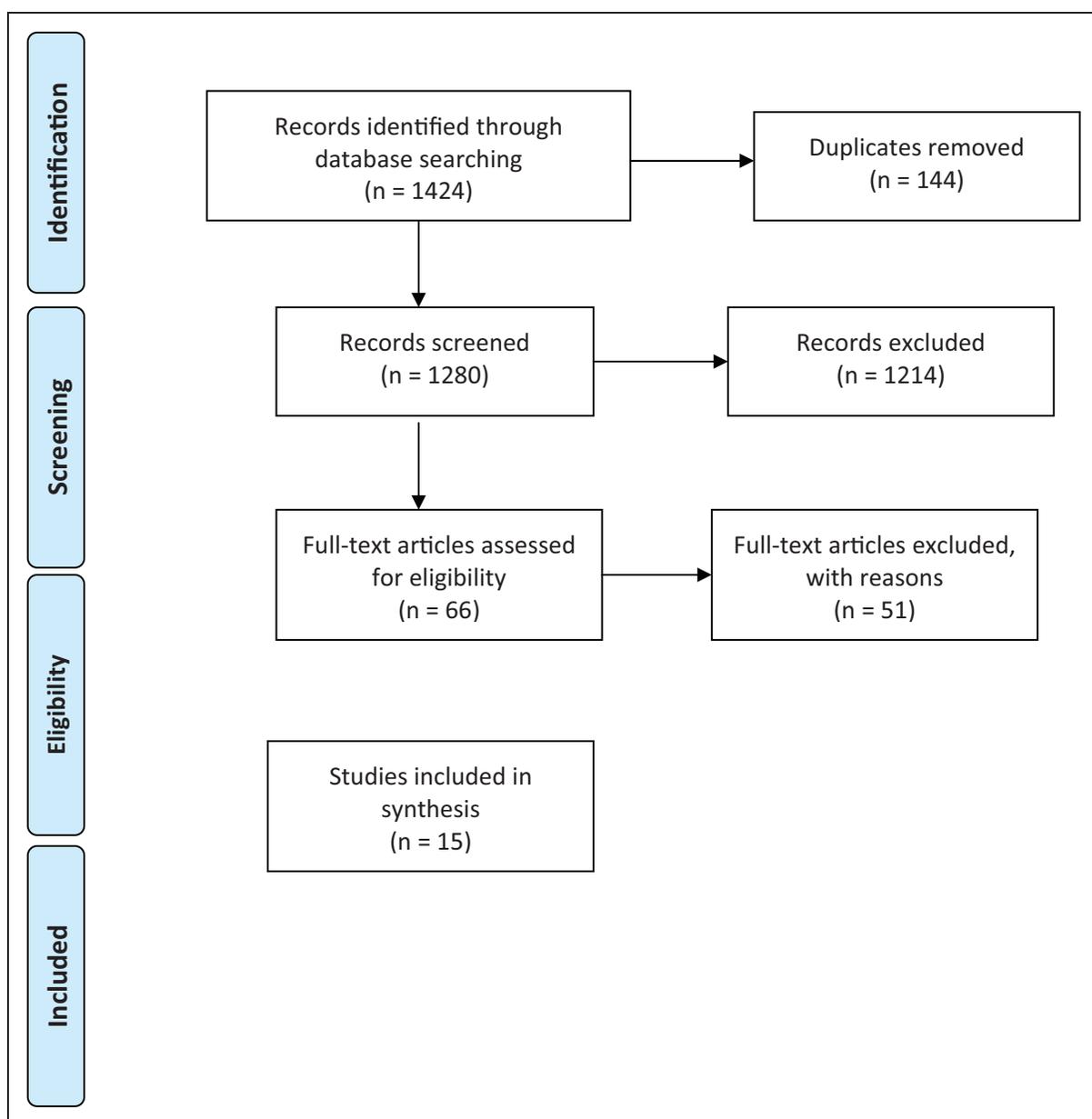


Figure 1. PRISMA.

### HIV and other STIs

The most common area of research among the studies was HIV. Six of these eight studies were published from 1994–2004. The four studies that compared female and male subpopulations found higher rates of HIV among incarcerated women. Burchell et al. (2003) surveyed 597 people in Ontario prisons about HIV testing histories, of which 26% were female. Female participants were more likely than male participants to have experienced several risk factors: having had more than 50 sexual partners (24% versus 17%), participation in sex work (26% versus 1%) and injection drug use (IDU) (37% vs.

30%). Female participants were more likely than male participants to have been tested for HIV (69% vs. 58%). HIV seroprevalence was not measured. De et al. (2004) conducted a large Canada-wide study to determine seroprevalence of HIV among 732 women and 19,364 men. The authors found a higher proportion of women than men underwent testing, and 3.7% of women compared with 1.9% of men reported being HIV positive. Dufour et al. (1996) found higher seroprevalence of HIV among incarcerated women compared to men in Quebec (8% versus 2%). Rothon et al. (1994) also found higher rates of HIV among women than men in BC.

6 **Table 1.** Sexual and reproductive health outcomes of people incarcerated in prisons for women in Canada.

| Author and Year               | Jurisdiction | Aim   | Participants  | Methods   | Outcomes   | Results  |
|-------------------------------|--------------|---|---|---|--|--|
| Besney et al. (2018)          | Alberta      | To explore the impact of a Women's Health Clinic (WHC) on care at a provincial prison.  | 109 women's charts reviewed; 11 women participated in focus groups.   | Mixed. Retrospective chart review & focus groups with women and staff.  | Intake tool measured socio-demographics, menstrual/reproductive history, social and personal risk history, sexual history, medical and surgical history, medications, allergies, addictions, housing status, and intimate partner violence (IPV) assessment. | <b>Quantitative results:</b> STI testing uptake significantly increased through the WHC compared with the 6 months prior to incarceration (17% to 89%, $p < .001$ ). Up-to-date Pap tests significantly increased through the WHC (15% to 54%, $p < .001$ ).<br><b>Qualitative themes:</b> A) Factors influencing use of women's health services: (1) Competing priorities impede access in the community; 2) Incarceration is opportunity to access; 3) Lack of access to comprehensive, gender-specific health services; 4) Mistrust of health care professionals; 5) Fragmentation of health care. B) Impact of WHC on accessing Women's Health Services: 1) Improved access to comprehensive, gender-specific services in a timely manner; 2) Knowledgeable and empathetic staff. C) Factors influencing the use of women's health services upon community transition: 1) Targeted community health resources; 2) Support navigating health and social services. |
| Burchell et al. (2003)        | Ontario      | To determine the prevalence and correlates of self-reported HIV testing among inmates in correctional centers in Ontario, Canada. | 597 incarcerated people (439 men and 158 women).  | Quantitative. Cross-sectional survey delivered to inmates in a closed interview.  | Previous HIV testing history, most recent HIV test specifics (e.g. date, time, location), risk factors (sexual activity, tattoos, drug use).   | 58% of all participants had ever been tested for HIV; 21% had voluntarily tested in past year while incarcerated. Correlates of voluntary testing while incarcerated included being single/never married, without casual sexual partners, injecting drugs twice a week or more prior to incarceration, hepatitis history, and agreeing with mandatory testing. Women who experienced imprisonment were significantly less likely to receive adequate antenatal care than women in general population.  |
| Carter Ramirez et al. (2020a) | Ontario      | To examine antenatal care quality indicators for women who experience imprisonment and compare with the general population.       | 529 women in prison during pregnancy; 1570 women with history of incarceration but not in prison while pregnant; 8,84,063 control/general population women. | Quantitative. Linked correctional and health administrative data from women released from provincial prison and women in the general population with deliveries at 20 weeks gestation or greater. | Receiving first-trimester visit, receiving first-trimester ultrasonography, receiving 8 or more antenatal care visits.   | Women who experienced imprisonment were significantly less likely to receive adequate antenatal care than women in general population.   |
| Carter Ramirez et al. (2020b) | Ontario      | To describe the population-level risk of infant and maternal  | 529 women in prison during pregnancy; 1570 women with   | Quantitative. Linked health and corrections data for women  | Preterm birth rate, low birth weight, small for gestational age birth  | There was an increase of adverse outcomes in women who experience imprisonment (during or before pregnancy). Preterm birth   |

(continued)

**Table 1.** Continued.

| Author and Year                    | Jurisdiction     | Aim   | Participants  | Methods  | Outcomes  | Results  |
|------------------------------------|------------------|---|---|--|---|--|
| <b>De et al. (2004)</b>            | Canada           | outcomes for women who experience imprisonment.<br>To investigate rates of testing and HIV among inmates in all 53 Canadian federal penitentiaries. | history of incarceration but not in prison while pregnant, 884,063 control/general population women.<br>385 "new admission" women, 347 "resident inmate" women; 7,285 "new admission" men and 12,079 "resident inmate" men. | released from provincial prisons in 2010 compared to general population                      | weight, NICU admission, neonatal abstinence syndrome, placental abruption, preterm prelabour rupture of membranes.<br>Seroprevalence rate of antibodies to HIV  | risk rates were 15.5% (prison pregnancy) and 12.5% (prior incarceration); low birth weight risk rates were 13% (prison pregnancy) and 1.6% (prior incarceration) small for gestational age birth weight risk rates were 18.1 % (prison pregnancy) and 19.2% (prior incarceration).<br>3.7% of women and 1.9% of men were HIV positive. A higher proportion of women than men underwent HIV testing.                        |
| Dufour et al. (1996)               | Quebec           | To assess HIV prevalence and related risk factors at the Quebec Detention Centre.   | 618 people at a Quebec detention Centre (499 men and 119 women).  | Quantitative. Survey and HIV antibody testing of saliva.                                     | HIV prevalence, sexual history, intravenous drug use (IDU) history, tattooing   | There was a 2% HIV prevalence rate among men and an 8% prevalence rate among women. IDU was associated with HIV positivity.  |
| <b>Elwood-Martin (2000)</b>        | British Columbia | To determine what factors are associated with increased willingness to undergo Pap testing while incarcerated.                                      | 100 incarcerated women.   | Quantitative. Survey.  | Age, ethnic background, educational background, length of sentence, knowledge of Pap testing, previous abnormal pap, willingness to undergo Pap.  | 75% of women were willing to undergo Pap testing.  |
| <b>Elwood-Martin et al. (2004)</b> | British Columbia | To examine the impact of a nurse-led Pap screening intervention at the Burnaby Correctional Centre for Women.                                       | 650 incarcerated women.   | Quantitative. Compare Pap screening rates before and during the 20-week intervention period. | Pap screening rates. The intervention included the establishment of a nurse-led Pap clinic for one-on one education about cervical cancer and its early detection, Pap testing, reporting of Pap test results and arranging for appropriate treatment.<br>Seroprevalence rate among participants of antibodies to HIV, age, length of sentence, place of residence. | A higher proportion of inmates were screened during the intervention period (26.9%, 95% CI: 22.1%, 31.7%) than during the preintervention period (21.0%, 95% CI: 17.0%, 25.7%) but difference was not statistically significant ( $p = 0.06$ ). Of 180 women incarcerated during the intervention period who had not had a Pap test in the preceding 2.5 years, 15.0% received Pap testing during the intervention period. |
| Ford (1995)                        | Ontario          | To determine the seroprevalence of HIV infection and hepatitis C among inmates of a federal penitentiary for women.                                 | 113 women incarcerated at a federal penitentiary.   | Quantitative. Point-prevalence study of voluntary, anonymous, linked HIV antibody testing.   | Recent incarceration, sociodemographic  | The women had an overall seroprevalence rate of 0.9%.  |
| Gormley et al. (2020)              |                  | To determine associations between social  | 1422 women (inclusive of trans and non-   | Quantitative. Self-reported baseline   | Recent incarceration, sociodemographic  | Recent incarceration was associated with unstable housing, current sex work, IDU,  |

(continued)

| Author and Year             | Jurisdiction                       | Aim  | Participants   | Methods   | Outcomes  | Results   |
|-----------------------------|------------------------------------|--|--|---|---|---|
| Hankins et al. (1994)       | British Columbia, Ontario & Quebec | determinants of health and HIV-related care outcomes among women living w HIV with recent incarceration experience.  | binary women) over the age of 16 who live with HIV.                                | surveys from a longitudinal cohort study of women living with HIV).   | factors, housing stability, HIV stigma, drug use, mental health diagnoses, Hep C diagnoses, Having ever been linked to HIV care or on ART, viral load.  | lower income and sub-optimal ART adherence. Incarceration more than a year ago was associated with current sex work, IDU and experiencing violence.   |
| Hankins et al. (1994)       | Quebec                             | To determine the relative contributions of pre-incarceration needle use and sexual practices to HIV antibody seropositivity among incarcerated women.                | 394 incarcerated women.  | Quantitative. Sociodemographic survey and test for HIV antibodies.  | History of IDU, sex work, HIV seropositivity.   | 6.9% were seropositive for HIV antibodies. Of women with a history of prior injection drug use (IDU), 13% were seropositive. Of those for whom sex work was their principal source of revenue prior to incarceration, 12.9% were seropositive.        |
| Hutchison (2020)            | Canada                             | To report findings from qualitative interviews conducted with five formerly incarcerated women to provide empirical evidence that strip searching is sexual assault. | 5 formerly incarcerated women.   | Qualitative interviews.   | Thematic  | Main themes: (1) "Sexual abuse is when you don't have the choice to say no," (2) "There's nothing I could do about it and if I did, I would get a charge," and (3) "Every time, it felt like the same experience."                                    |
| Kouyoumdjian et al. (2018)  | Ontario                            | To determine cervical cancer screening rates for women in provincial prison in Ontario.  | 4553 women in the prison group and 3647 936 women in the general population group. | Quantitative. Retrospective cohort study used correctional and health administrative data from January 12, 2006 to December 31, 2013. | Whether women were overdue for cervical cancer screening at the time of admission to prison or on July 12, 2010 defined as not having been screened in the previous 3 years, and whether women who were overdue were still overdue after 3 years. | Women in the prison group had 2.20 times (95%CI, 2.08-2.33) odds of being overdue for cervical cancer screening compared with women in the general population. Women in the prison group had nearly twice the odds of still being overdue at 3 years. |
| Liauw et al., 2016, Ontario | Ontario                            | To describe the rates of unintended pregnancy and contraceptive use for incarcerated women in Ontario.   | 85 incarcerated women participants.  | Quantitative. Survey  | Prior unintended pregnancy, prior therapeutic abortion, contraceptive use, unmet need for contraception.  | 82% of women been pregnant, and of these 77% had experienced an unintended pregnancy and 57% reported having undergone a therapeutic abortion. 80% of women were not using a reliable form of contraception.  |

(continued)

Table 1. Continued.

| Author and Year                                     | Jurisdiction | Aim   | Participants  | Methods  | Outcomes   | Results  |
|---|--------------|---|---|--|--|--|
| Rothon, Mathias & Schechter, 1994, British Columbia |              | To determine the prevalence of HIV infection among people entering provincial adult prisons in British Columbia and to study associations between HIV infection and specific demographic and behavioural characteristics. | 2483 adult inmates in provincial prisons (2332 male, 150 female). | Quantitative. Survey and HIV antibody testing of saliva. | HIV status, sex, Indigenous status, age, history of IDU. | HIV prevalence rate of 1.1% in the study population; HIV as. associated with history of IDU. |

In their study of prevalence of HIV among women in a federal prison in Ontario, Ford (1995) found a rate of 0.9%. In a Quebec prison for women, Hankins et al. (1994) found a rate overall of 6.9%, which rose to 12.9% among those who disclosed a history of sex work, and 13% among those with injection drug use. Besney et al. (2018) included two women previously known to be HIV positive in their study, generating a prevalence rate of 2.04%.

One recent study, Gormley et al. (2020) surveyed 1422 women living with HIV who had histories of incarceration. The authors found recent incarceration to be associated with unstable housing, current sex work, IDU, lower income and suboptimal ART adherence.

Through a prison women's health clinic intervention, Besney et al. (2018) tested 98 participants for STIs including HIV, chlamydia, gonorrhoea and syphilis. They found 0 participants tested positive for HIV or syphilis, 11 tested positive for chlamydia and 5 for gonorrhoea. The authors found uptake for STI testing significantly increased compared with the six months prior to incarceration, from 17% to 89%. The authors estimate a lifetime prevalence for at least one STI (including HIV, chlamydia, gonorrhoea and syphilis) within the study population of 16.33%. Besney et al. (2018) also examined cervical health including Pap testing.

### *Pap testing/cervical cancer screening*

Four studies examined Pap testing/cervical cancer screening. Elwood Martin (2000) surveyed 100 women at a BC provincial prison and found 75% expressed willingness to undergo Pap testing. Elwood Martin et al. (2004) measured participation among women at a provincial prison in BC in Pap screening during the implementation of a nurse-led clinic. Although the rate increased during the clinic intervention from pre-implementation (26.9% vs. 21%), the change was not statistically significant. In an analysis of 4533 women in prison in Ontario compared to the general population, Kouyoumdjian et al. (2018) found women in prison were 2.2 times more likely to be overdue for cervical cancer screening.

Like Elwood Martin et al. (2004), Besney et al. (2018) measured the impact of a nurse-practitioner-led women's health clinic in a provincial prison in Alberta. However, the latter intervention saw Pap tests significantly increase (15% to 54%). Of those tested, 3% had an abnormal Pap result.

### *Pregnancy, contraception, birth, neonatal outcomes*

Besney et al. (2018) examined pregnancy testing and contraception use associated with the new women's health clinic. Of 109 women whose charts they reviewed,

21% either requested or required pregnancy testing, however none were diagnosed with pregnancy. Besney et al. (2018) found 67% of women described using a form of contraception, although it is not clear if the authors are referring to use during the period of incarceration. Liauw et al. (2016) surveyed 89 women in provincial prison in Ontario. They found 82.4% had ever been pregnant. Of those who had, 57.1% had previously sought an abortion and only 28% described their last pregnancy as planned. Furthermore, 80% reported an unmet need for contraception while incarcerated.

Carter Ramirez et al. (2020a) examined access to prenatal care for women experiencing incarceration in Ontario prisons, and Carter Ramirez et al. (2020b) examined labour and neonatal outcomes in this same population. The former study found women who had experienced imprisonment were significantly less likely to receive adequate prenatal care compared to the general population. The latter study found women who had experienced incarceration during pregnancy or prior to pregnancy were more likely to experience preterm birth and their infants were more likely to be low birthweight or small for gestational age.

### Strip searching

Hutchison (2020) conducted a qualitative study with five previously incarcerated women about the experience of strip searching. While strip searching is not a health outcome, the way in which participants responded to that carceral protocol was as sexual traumatization. Hutchison (2020) found participants described the experience as degrading and dehumanizing, and revictimizing for participants with childhood histories of sexual assault.

### Discussion

This systematic scoping review aimed to synthesize research in Canada pertaining to the reproductive health of women experiencing incarceration. Despite our generous definition of sexual and reproductive health outcomes, our review includes only 15 studies, with seven studies from the last five years and, curiously, *none* from 2004–2016. This is not surprising and is in keeping with the findings of Kouyoumdjian et al. (2015); their review called for more research in sexual and reproductive health. A scoping review approach proved appropriate for narrative organization of the few sexual and reproductive health outcomes that have been examined, and identification of gaps.

The predominant outcome of interest was testing for HIV or Pap testing/cervical screening: only five studies

did *not* examine HIV or Pap screens. The studies showed variation in rates of HIV seroprevalence among women experiencing incarceration from 0.9% to 8%, in keeping with CATIE Canada's Source for HIV and Hepatitis C Information (CATIE) is current estimates of HIV prevalence in prisons at 1–8% (CATIE, 2020). The prevalence of HIV in the general population is estimated at 173 cases per 1,00,000 people (CATIE, 2018), or 0.01%: HIV is clearly disproportionately experienced by incarcerated people.

Much has changed in sexual and reproductive health in the 25+ years between the first of the included studies pertaining to HIV and Pap testing and today. HIV infection can be prevented with pre-exposure prophylaxis (PrEP) and treated with anti-retroviral medications. Screening schedules for cervical cancer start at later ages and it is now recommended to wait longer intervals (3 years) between normal Pap results (Canadian Taskforce on Preventive Health Care, 2013). Widespread HPV vaccination reduces transmission risk and risk of cervical cancer (Brisson et al., 2020).

In addition to the findings that women experiencing incarceration have higher rates of HIV and of abnormal and overdue Pap tests, our review found high rates of STIs (Besney et al., 2018) and of unplanned pregnancy (Liauw et al., 2016). Besney et al. (2018)'s measure of pregnancy rate of zero (0%) appears to be the only one available in the literature regarding incarcerated women in Canada, albeit with a very small sample size of 20 women who requested a test. The *Bangkok Rules* call for voluntary, confidential, and timely screening that is complemented with appropriate preventative or therapeutic care and education. STI, HIV, Pap and pregnancy screening/testing must be routinely offered to all people on admission to carceral facilities.

The *Bangkok Rules*, *Mandela Rules* and legislation in Canada require that people in prisons receive care consistent with at least professional standards. The recent studies by Carter Ramirez et al. (2020a), Kouyoumdjian et al. (2018) and Liauw et al. (2016), all found barriers and delays to reproductive health care in prisons.

Two studies measured the impact of introducing improved reproductive-health-focused service delivery. Although Besney et al. (2018) found significantly higher rates of STI and Pap testing when a women's health clinic was introduced at a provincial prison in Alberta, the earlier study by Elwood Martin et al. (2004) did not find significant increases in test seeking when a nurse-led clinic was introduced, despite very high rates of perceived acceptability of Pap testing (Elwood Martin, 2000). The dearth of evidence allows few conclusions: it is surprising that in three decades, only two such initiatives have been studied.

The large retrospective studies by Carter Ramirez et al. (2020a) and Carter Ramirez et al. (2020b) are the only substantial quantitative evidence in Canada of the impact of incarceration on maternal and newborn health. Carter Ramirez et al. (2020a) compared the outcomes of 544 births to women who had been pregnant while incarcerated, 2,156 births to women who were incarcerated at some point before pregnancy, and 1,284,949 births among the general population. They adjusted for maternal age and parity. They found the odds of preterm birth to be 2.7 and 2.1 times more likely for these groups, respectively, in comparison to the general population. Preterm birth is the leading cause of death of children under the age of five (World Health Organization, 2020), places women at increased risk of ill-health (Henderson et al., 2016), increases hospitalization costs (Petrou et al., 2019).

Carter Ramirez et al. (2020b) found that of 626 pregnancies among incarcerated women, only 30.8% had a first trimester visit; less than half had the recommended eight prenatal visits; and 34.6% had a first-trimester ultrasound. The case and control groups were comparable in terms of maternal age and parity. Equitable access to prenatal care is critical to ensuring the health of pregnancies and early child health (Chief Public Officer of Health, 2009). These findings of harm point to the importance not only of measuring these outcomes among formerly/incarcerated people, but of responding to what is already known, and diverting pregnant people/people who may become pregnant away from incarceration to promote health and wellbeing in pregnancy, birth and infancy. Particularly in the time of COVID-19, during which prisons have become a key site of Canadian outbreaks (Cousins, 2020), we must question the utility of trying to augment health services in a context that is simply inconducive to health (Paynter et al., 2020a).

The lack of attention to maternal health of incarcerated people and to the health of adult and child participants in mother-child residential programs in Canada was demonstrated in earlier systematic scoping reviews (Paynter et al., 2019, 2020b). Outside of Canada, mental health has been a key concern in examinations of maternal health outcomes among incarcerated women (Paynter et al., 2019, 2020c). Most people in prisons for women are mothers. Despite generous inclusion criteria and broad search terms, our review did not find any research pertaining to reproductive mental health. Given the disproportionate experience of mental illness among populations in prison, the lack of research in this area requires urgent attention.

We also note the lack of research addressing breast health. Besney et al. (2018) noted that 7% of their

participants had ever noticed breast abnormalities, but their intervention, the introduction of a Women's Health Clinic, did not result in increased care seeking for breast health matters. There were also no studies addressing breastfeeding.

Bodily autonomy is critical to sexual and reproductive health. Security of the person is a constitutionally protected right in Canada (Canada, 1982). We found one study that speaks to how carceral practices, namely strip searching, violate that autonomy (Hutchison, 2020). Hutchison (2020) describes formulating their study as a response to the lack of empirical investigation of the gendered impact of strip searching. Carceral force could be expected to traumatize or re-traumatize people who had experienced sexual violence and violations of their personal security. This aspect of sexual and reproductive health is under-studied.

We identify key gaps in basic data collection, including the data collection required by the *Bangkok Rules* when a person is admitted to a prison for women. To begin to address the complex health needs of people in prisons for women, comprehensive, confidential, voluntary assessment is required. The clinical intake assessment tool developed by Besney et al. (2018) with respect to the introduction of a women's health clinic at a provincial facility in Alberta presents a potential approach. At minimum, assessment must include serology for sexually transmitted and blood-borne diseases, screening for mental health-care needs, reproductive health history, substance use disorder, and experiences of gendered violence. Screening for these outcomes must be met with care including education, prevention, and treatment, and kept confidential. However, Besney et al. (2018) do not comment on the challenges to confidentiality posed by clinical assessment within a carceral setting. Silva et al. (2017) called for a national conversation and guideline development process for research involving incarcerated people because of the challenges of power imbalances and threats to privacy and confidentiality in the prison environments.

Finally, we must comment on the lack of research that takes an intersectional approach and explores the impact of racism, homophobia and other layers of social oppression in Canada (Hill Collins, 1989). In Canada, Indigenous women experience systemic barriers to reproductive health care (Smylie & Phillips-Beck, 2019). Lack of race-disaggregated data has long been a barrier in Canada to understanding the impact of anti-Black racism on the sexual and reproductive health of Black women (Nnorom et al., 2019). An early study by Burchell et al. (2003) found 17% of their female participants identified as Black and 66% as Aboriginal but offer no further comment on how racism intersects

with HIV. Fifteen years later, Besney et al. (2018) find 25% of their population identify as lesbian and 64% as Indigenous, however they too do not examine intersections between experiences of racism and homophobia and the outcomes of interest in their women's health clinic study.

## Limitations

This review is limited by our interpretation of what to include as a sexual and reproductive health outcome. While we endeavoured to think broadly, it can be argued that every aspect of health implicates sexual and reproductive health, including pain, ability, and chronic illness. The studies included in this review are dominated by populations in Ontario and BC, potentially obscuring regional variations. This review was restricted to articles published in English. Some of the studies are over 25 years old and clinical recommendations and practices have changed significantly in that time. As per JBI methods, we did not assess study quality. Trans and nonbinary people may be imprisoned in facilities for men or women, but few of the studies are stated to be trans or nonbinary inclusive. The sexual and reproductive health experiences of trans and nonbinary people in prisons should be a priority for researchers.

## Conclusion

The sexual and reproductive health of people in prisons for women in Canada is starkly understudied. The predominant outcomes studied were HIV testing and Pap screening, both of which have changed significantly over time with respect to screening/testing, treatment, prevention and risk identification. The sexual and reproductive health of people in prisons is complex and fundamental to their overall wellbeing and their futures as parents, partners and participants in civic life.

The extraordinary increase in incarceration of women in the past two decades has not been accompanied by adequate examination of the impact on sexual and reproductive health. The results of this review demonstrate unmet sexual and reproductive health service needs, inadequate access to care, and poorer perinatal outcomes for people who have ever experienced incarceration. This should cause health care providers, policy leaders and researchers to question current practices in both assessment and care in prisons for women, and the acceptability of incarceration of women when legal requirements for health services cannot be met.

## Appendix: Search Strategy for CINAHL

| CINAHL Search # | Thursday, April 1, 2019  |          |
|-----------------|--|----------|
|                 | Query  | Results  |
| S1              | ((women OR female* OR woman OR mother* OR pregnan*) N3 (prison* OR incarcerat* OR correction* OR offender* OR penitentia* OR inmate* OR convict* OR jail*))  | 1,905    |
| S2              | canada OR canadian OR newfoundland OR labrador OR "nova scotia" OR "new brunswick" OR "prince edward island" OR Quebec OR ontario OR manitoba OR saskatchewan OR alberta OR "british columbia" OR yukon OR "northwest territories" OR Nunavut OR "atlantic Canada" OR "atlantic province*" OR "prairie province*" OR maritimes OR "maritime province*" OR province* OR kingston OR abbotsford OR edmonton OR nekaneet OR "maple creek" OR kitchener OR joliette OR truro | 1,30,783 |
| S3              | "Nova Institution for Women" OR "Grand Valley Institution for Women" OR "Fraser Valley Institution for Women" OR "Edmonton Institution for Women" OR "Joliette Institution for Women" OR "Okimaw Ohci healing lodge" OR "prison for women"   | 24       |
| S4              | ((MH "Prisoners") OR (MH "Correctional Health Services") OR (MH "Correctional Health Nursing") OR (MH "Correctional Facilities")) AND (MH "Women+")  | 347      |
| S5              | (MH "Canada+")   | 89,220   |
| S6              | S1 OR S4   | 2,018    |
| S7              | S2 OR S5   | 1,30,783 |
| S8              | S6 AND S7  | 66       |
| S9              | S3 OR S8   | 87       |

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