Health status of prisoners in Canada

Narrative review

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Abstract

Objective To review the literature for quantitative research on the health status of persons in custody in provincial, territorial, and federal correctional facilities in Canada, and summarize recent evidence.

Quality of evidence A search was performed in research databases and the websites of relevant Canadian governmental and non-governmental organizations for quantitative studies of health conducted between 1993 and 2014. Studies were included that provided quantitative data on health status for youth or adults who had been detained or incarcerated in a jail or prison in Canada.

Main message The health status of this population is poor compared with the general Canadian population, as indicated by data on social determinants of health, mortality in custody, mental health, substance use, communicable diseases, and sexual and reproductive health. Little is known about mortality after release, chronic diseases, injury, reproductive health, and health care access and quality.

Conclusion Health status data should be used to improve health care and to intervene to improve health for persons while in custody and after release, with potential benefits for all Canadians.

EDITOR'S KEY POINTS

- The health of persons who experience detention or incarceration in provincial, territorial, and federal facilities is poor compared with the general Canadian population.

- Health status data can be used to improve health care services and health for this population, with potential benefits for all Canadians, such as decreasing health care costs, improving health in the general population, improving public safety, and decreasing re-incarceration. The time in custody provides an opportunity to intervene.

- Information on health status is also important for defining areas of focus for improving health and health care. Health care in correctional facilities is largely delivered by government authorities in Canada, which makes the lack of data on some key indicators of health striking.

POINTS DE REPÈRE DU RÉDACTEUR

- L'état de santé des personnes en détention ou incarcérées dans les établissements provinciaux, territoriaux et fédéraux est médiocre par rapport à celui de la population canadienne en général.

- Il est possible d'utiliser les données sur l'état de santé pour améliorer les services médicaux et la santé dans cette population et, ce faisant, apporter potentiellement des avantages à tous les Canadiens en réduisant les coûts des soins de santé, en améliorant la santé et la sécurité publique dans l'ensemble de la population et en diminuant les incarcérations répétées. Le temps passé en détention donne l'occasion d'intervenir.

- Les renseignements sur l'état de santé revêtent aussi de l'importance pour définir les domaines où il est prioritaire d'améliorer la santé et les soins. Au Canada, les soins de santé dans les établissements correctionnels sont majoritairement fournis par les autorités gouvernementales et il est donc étonnant que les données sur certains indicateurs clés soient insuffisantes.

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Cet article a fait l'objet d'une révision par des pairs.
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L'état de santé des détenus au Canada

Révision narrative

Résumé

Objectif Passer en revue la documentation portant sur les recherches quantitatives concernant l'état de santé des personnes en détention dans les établissements correctionnels provinciaux, territoriaux et fédéraux au Canada et faire la synthèse des données probantes récentes.

Qualité des données Une recension a été effectuée dans les bases de données de recherche et les sites web des organisations gouvernementales et non gouvernementales canadiennes pour trouver des études quantitatives sur la santé réalisées entre 1993 et 2014. Les études qui comportaient des données quantitatives sur l'état de santé des jeunes ou des adultes détenus ou incarcérés dans une prison ou un établissement correctionnel au Canada ont été retenues.

Message principal L'état de santé de cette population est médiocre par rapport à celui de la population canadienne en général, comme le font valoir les données sur les déterminants sociaux de la santé, la mortalité en détention, la santé mentale, la toxicomanie, les maladies transmissibles et la santé sexuelle et de la reproduction. On en sait très peu à propos de la mortalité, des maladies chroniques, des blessures, de la santé de la reproduction, de même qu'en ce qui a trait à l'accessibilité et à la qualité des soins de santé après la libération.

Conclusion On devrait utiliser les données sur l'état de santé pour améliorer les soins de santé et intervenir pour que ces personnes soient en meilleure santé pendant et après leur détention, ce qui pourrait être bénéfique pour tous les Canadiens.

More than 11 million people are imprisoned worldwide at any given time,[1] and more than 30 million move through the prison system annually.[2] In Canada, there are more than 250 000 adult admissions each year to correctional facilities, about 8000 of which are to federal custody, and there are 14 000 youth admissions each year.[3,4] On an average day, there are about 40 000 people in correctional facilities.[5-7]

In Canada, the federal and provincial or territorial governments share jurisdiction over correctional institutions. Persons who are sentenced to less than 2 years or who are detained before sentencing (remanded) serve time in provincial and territorial facilities, whereas persons who are sentenced to 2 years or longer serve time in federal facilities. Health care in custody might be delivered by the governmental authority responsible for health, as in Nova Scotia and Alberta, by the governmental authority responsible for corrections, as in federal facilities and in Ontario, or contracted out to a private company, as in British Columbia.

Standards for health care in federal facilities are defined in the federal *Corrections and Conditional Release Act*.[8] In provincial facilities, federal legislation such as the *Canada Health Act* remains applicable to health care delivery,[9] and provincial or territorial legislation might also apply (eg, the *Ontario Health Protection and Promotion Act*[10]). The United Nations states that "Prisoners shall have access to the health services available in the country without discrimination on the grounds of their legal situation."[11] However, this obligation is not consistently met in Canada.[12-16]

Given the large number of persons in custody each year in Canada and that the median length of detention is less than 1 month,[3] most physicians in Canada likely encounter people either while in custody or after release. Knowledge about the health of this population is important to ensure appropriate care and to inform programs and policies to improve health. In this article, we describe the health status of people who experience detention or incarceration in correctional facilities in Canada, and we highlight opportunities to improve health.

Quality of evidence

We performed a search of quantitative studies of health conducted between 1993 and 2014. We searched MEDLINE, PsycINFO, EMBASE, the Cochrane Library, Social Sciences Abstracts, Social Services Abstracts, Sociological Abstracts, CINAHL, Criminal Justice Abstracts, ERIC, ProQuest Criminal Justice, ProQuest Dissertations and Theses, Web of Science, and Scopus in April 2014, and we also searched the websites of relevant Canadian governmental and non-governmental organizations. The search strategy is available from the corresponding author (F.K.) on request.

We included studies that provided quantitative data on health status[17,18] for youth and adults who had been detained or incarcerated in a jail or prison in Canada. We included studies that were conducted from 1993 to 2014 in order to capture data that reflect the current health status of this population.

Two reviewers (F.K. and A.S.) independently reviewed titles and abstracts for eligibility for inclusion, and 1 reviewer (F.K. or A.S.) reviewed each full article and extracted relevant data. Where the same data were reported across multiple publications, we included the publication that was most recent or that reported more comprehensive data. In some cases in which many studies had been conducted on a given risk factor or condition, we reported only data from key studies (eg, studies that were more recent or that had larger samples), as the main goal of our study was to describe the health status of this population.

Main message

Health status

Social determinants of health: More than 50% of those admitted to sentenced custody are younger than 35 years of age, compared with less than one-third of the Canadian population, and the median age of those admitted to remand ranges between 28 and 33 years across the provinces and territories.[3] About 1 in 10 adult admissions to federal, provincial, or territorial custody are for women,[3] and 1 in 5 youth admissions are for girls.[4] About 1 in 4 admissions are for aboriginal persons, while they make up only 4% of the general population.[3,4]

Most persons in custody have experienced substantial adverse events in childhood, such as witnessing family violence, having 1 or more parents absent, or being involved with the child welfare system.[19-32] At least half report a history of childhood physical, sexual, or emotional abuse.[19,21-23,25,28-50] About 15% to 20% of aboriginal persons in federal facilities have attended residential schools.[29,51]

The socioeconomic status of this population is low, as indicated by a lack of housing,[30,52-55] low employment rates,[22,26,30,52,54,56-58] low educational achievement,[30,58] and low income status.[58,59] One-fifth of men in provincial custody in Toronto, Ont, in 2009 and 2010 reported being homeless at the time of admission,[54] and more than half of youth in custody in British Columbia in 2012 and 2013 had been homeless at some time.[22] Most adults in custody have not completed high school[30,58] (eg, more than 55% of people admitted to federal custody in 2011 had less than a grade 10 education[30]), whereas only 19% of all Canadian adults have not obtained a high school diploma.[60]

Mortality: A large number of persons die in custody each year[61,62]: 536 persons died in federal custody between 2003 and 2013, and 327 died in provincial or territorial custody between 2001 and 2010.[63,64] Mortality rates are higher for persons in custody than for the general population[62]: in Ontario between 1990 and 1998, the crude mortality rate for men in federal facilities was 420.1 per 100 000 and in provincial facilities it was 211.5 per 100 000, compared with a rate of 187.5 per 100 000 in men with a similar age distribution in the general population. This is remarkable, as persons in custody are protected from many types of unintentional injuries, which are the leading cause of death in the general population for persons aged 25 to 44.[65] Rates of suicide and homicide are particularly high compared with the general population,[63,64] with suicide rates of 70 per 100 000 in federal custody and 43 per 100 000 in provincial custody compared with the overall Canadian rate of 10.2 per 100 000, and homicide rates of 22 per 100 000 in federal custody and 2.3 per 100 000 in provincial custody compared with the overall Canadian rate of 1.6 per 100 000.

International data consistently show high mortality rates subsequent to release from custody,[2] including from preventable causes such as overdose[66-71]; however, there are no Canadian data on rates or causes of death after release.

Mental health and substance use: Most persons in correctional facilities have mental disorders as defined by the *Diagnostic and Statistical Manual of Mental Disorders*.[22,23,28,32,35,39,52,58,72-84] Among men in provincial custody in Edmonton, Alta, lifetime prevalence rates and the corresponding rates in the general population of men were 91.7% versus 43.7% for any disorder, 87.2% versus 39.6% for substance use disorders, 56.7% versus 8.6% for antisocial personality, 22.8% versus 12.0% for affective disorders, 2.2% versus 0.5% for schizophrenia, and 1.1% versus 0.4% for cognitive impairment.[73] Similarly, men in federal detention in British Columbia in 1999 had lifetime rates 2 to 3 times greater than men in a community sample with respect to mood disorders, schizophrenia, anxiety disorders, substance use disorders, and eating disorders.[83] In 2 studies, more than 4 of 5 youth in detention in British Columbia and Ontario, respectively, met criteria for at least 1 disorder in the *Diagnostic and Statistical Manual of Mental Disorders*,[28,32] compared with 30.6% in the general community sample in the Ontario study.[32]

The recent tragic and preventable deaths of young persons in federal custody[85,86] have brought international attention to the high rates of suicide and self-injury in persons in custody in Canada.[19,22,23,38,45,52,55,73,74,87-98] Most studies have found that more than 1 in 5 persons in custody have attempted suicide.[38,52,73,74,88-90,92,94,95,99] Of men in provincial custody in Edmonton, 22.8% had attempted suicide, which was 7.1 times the expected rate.[73] In 2012 and 2013, 13% of youth in custody in British Columbia had seriously considered suicide and 10% had attempted suicide in the past year.[22]

Regarding substance use, many persons in custody report having initiated alcohol and drug use at a young age.[22,23,29,55,100,101] More than two-thirds of adults and youth in custody are current smokers[22,97,102] compared with 16% of all Canadians.[103] Alcohol use is very common in this population, as is risk behaviour such as binge drinking and drinking and driving.[21,22,24,48,55,92,104-107] Regarding drug use, most people report recent use at the time of admission to custody,[22,52,57,100,101,108,109] and injection drug use is common,[52,53,56,97,108-120] with about 1 in 10 adults reporting having injected in the months before admission and 1 in 20 youth reporting ever injecting.[20,21,52,53,108,109,114,115,121] People continue to use drugs in custody,[22,56,57,97,112,114,122-124] including by injection.[56,97,107,109,113,114,117-119,125]

Time in custody might serve as a unique opportunity to offer services and information to persons using substances who might otherwise be hard to reach. There is good evidence for interventions in custody and after release to reduce smoking,[126] drug use, and associated risk behaviour after release.[127]

Communicable diseases: Tuberculosis is relatively common in persons in federal custody, at 22.4 active cases per 100 000 compared with 4.6 per 100 000 in the general population.[128] Of persons in federal custody in 2007 and 2008, 15.9% were infected with latent tuberculosis, and the estimated annual rate of skin test conversion during incarceration was 1.2%.[129]

Several large serologic studies have identified that blood-borne infections are very common in adults in custody.[117,119,121,130-135] About 30% of those in federal facilities and 15% of men and 30% of women in provincial facilities are infected with hepatitis C,[118,119,129,130,132,134] and between 1% and 2% of men and 1% and 9% of women are infected with HIV.[117-119,129-131,133,136] There is evidence that people contract blood-borne infections while in custody, eg, the estimated incidence rate of hepatitis C for men in federal custody in 2007 was 16 infections per 1000 person-years.[109,137] Sharing needles and tattooing and piercing equipment, including in custody, likely contributes to these high rates.[21,53,97,114,115,118,119,121,137,138]

Sexually transmitted infections, such as chlamydia and gonorrhea, are also prevalent.[21,22,48,49,108,129,139] About 1 in 7 youth in British Columbia in 2012 and 2013 and 1 in 7 men in a provincial facility in Ontario in 2009 reported a history of sexually transmitted infections.[22,108,139] In 2007 and 2008, 0.9% of men and 2.8% of women in federal custody were diagnosed with chlamydia, 0.1% of men and 0.6% of women with gonorrhea, and 0.1% of men and 0.9% of women with syphilis.[129] In the 2009 Ontario study, 2.9% of men had positive test results for chlamydia and 0.6% for gonorrhea on admission.[139]

Vaccination rates might be suboptimal in this population,[140] and Canadian and international research indicates that recommended vaccinations could be effectively delivered while in custody.[127,140,141]

Chronic diseases: Little is known about chronic diseases in this population. There is some evidence that cardiovascular disease, diabetes, and asthma and other respiratory diseases occur at higher than expected rates,[53,63] but high-quality data are lacking. Three studies have identified an epilepsy prevalence between 1% and 4%.[21,48,74] While no data are available on cancer incidence or prevalence, 2 studies described the results of cervical cancer screening.[49,142] One found abnormal test results in 16% of girls,[49] and the other found that the proportion of findings of high-grade lesions was higher than in the general population.[142]

Sexual and reproductive health: Most people in custody report having been sexually active in the months preceding admission to custody,[22,48,53,109,113,119,143] and a minority of persons report having sex while in custody.[97,109,137] Sexual risk behaviour is common, such as early sexual debut,[22,121] a high number of lifetime sexual partners,[22,23,113,139] inconsistent condom use,[22,23,97,117,119,121,139,144] sex with high-risk partners such as persons who inject drugs,[119-121,137,145] and involvement in commercial sex.[56,113,116,117,119,120,146]

Little is known about the reproductive health status of people who experience detention or incarceration. More than half of adults have had children,[38,57,116,147] and about 1 in 3 youth in British Columbia in 2012 and 2013 had been pregnant (for girls) or caused a pregnancy (for boys).[22] A 2014 study in Ontario found that women in provincial custody had been pregnant an average of 4 times, at least 5% were currently pregnant, and more than half had had a therapeutic abortion.[148] Given that only 1 in 5 women who were sexually active and did not want to get pregnant were using contraception before admission to custody,[148] interventions to improve access to contraception might be appropriate in this population.[149]

Injury: Limited data suggest that rates of unintentional injury are high and are often associated with substantial consequences.[21,22,25,36,48,150] More than 1 in 2 youth in British Columbia in 2012 and 2013 had been injured seriously enough in the year before entering custody to require medical attention.[22] Three studies found that head injury was common in this population,[25,36,150] and in 2 studies more than half of men had evidence of traumatic brain injury.[25,150]

Health care

Health care use: Recent data are lacking on health care use. In the 1990s, most persons in federal custody saw a family physician while in custody[53,97] at a rate higher than expected for the general population.[53] Of those in federal custody, 5% had visited the emergency department during their incarceration, with a mean of 0.1 visits per year, and 3% had been admitted to a community hospital and 10% to a regional hospital.[53] The mean number of visits to a dentist was 1.7 per year.[53]

No Canadian data are available on access to primary care or general medical care in the community before admission or after release from custody. Such data could inform the role of health care services in custody, eg, whether preventive care services such as screening could reasonably be deferred until after release for those with a short length of stay or whether care in custody should be more comprehensive. Recent US data reveal low rates of primary care access and high rates of emergency department use and hospitalization after release.[151-153]

Rates of outpatient mental health care before admission vary across studies.[52,92,154] Overall, 6.3% of men admitted to a Quebec provincial facility in the 1990s reported previous psychological treatment,[92] 11.3% of 97 women in British Columbia in 1999 had had a mental health assessment and 28.9% had accessed mental health treatment,[52] and 8.7% of women and 5.9% of men admitted to federal custody in 2007 and 2008 had used psychiatric outpatient services.[154] A large number of persons report previous hospitalization for psychiatric illness. The rate of psychiatric hospitalization before admission was 9.2% of 97 women in custody in British Columbia in 1999,[52] and 30.1% of women and 14.5% of men admitted to federal custody in 2007 and 2008.[154] About half of those in federal custody receive some mental health service in custody,[30,63,97] and the psychiatric hospitalization rate in 2000 to 2001 was 69 per 1000 inmates, with an average length of stay ranging across regions from 147 to 232 days.[53]

Disease screening: In federal facilities, screening rates for tuberculosis and blood-borne infections are high, with recent data revealing that more than 70% of persons were screened for HIV, hepatitis C, and tuberculosis during their current incarceration.[109,129] Screening for blood-borne infections might occur less frequently in provincial facilities,[113] which could explain a relatively high proportion of persons not knowing about their HIV and hepatitis C infection status.[141]

Screening for mental health problems is typically done as part of routine intake procedures,[155] and there is some evidence that existing screening tools in some

jurisdictions might not adequately identify mental health problems, including risk of suicide.[94,156]

Only 15% of women in British Columbia in 1995 and less than 50% of girls in Ontario from 2003 to 2006 had Papanicolaou testing in custody.[49,142] Of women in custody in British Columbia in 2000 and 2001, 60% had been screened in the 30 months before admission, and of those who participated in a Pap testing intervention, only 50% were rescreened within 3 years.[116] No data are available on colorectal and breast cancer screening.

Treatment: A large proportion of persons in custody use prescribed medications,[38,157,158] in particular psychotropic medications.[52,82,92] At the time of intake to federal custody in 2007 to 2008, about 1 in 3 women and 1 in 5 men were using prescribed psychiatric medication,[154] and in 2013, 63% of women in federal custody were using prescribed psychotropic medication.[63]

The HIV treatment rate for persons with HIV in federal custody in 2007 to 2008 was 64.4%,[129] and almost half of those being treated for HIV in 2007 had missed their medications while in federal custody for at least 1 day because of temporary unavailability of medications at institutional pharmacies or transfers between institutions.[137] Studies of persons in federal custody have identified high rates of hepatitis C treatment adherence[159] and completion[160] in custody, high rates of treatment continuity after release with the support of a tailored program,[161] and similar treatment effectiveness rates to those in the community.[137,159-163]

Limitations

There are several limitations to the data presented and to this review. As noted elsewhere,[164] most of the studies conducted to date on the health status of this population have been cross-sectional, which might be associated with oversampling of persons who are in custody for longer periods. Most studies did not include a representative sample of persons in custody in Canada, and focused only on persons in federal custody or population subgroups. These issues might have affected the internal validity of the included studies and the generalizability of estimates to the whole population of persons in custody. While we used a broad and comprehensive search strategy, we might have missed some relevant studies, including those published outside of our search period and those in the gray literature. Similar to most narrative reviews, we did not appraise the quality of included studies, as our main goal was to provide a broad perspective on the health status of this population.[165]

Conclusion

Canadians in correctional facilities have poor health across a range of health status indicators, a finding that is consistent with international data on persons who experience imprisonment.[166] This information is relevant to physicians who assess and treat persons while in custody or after release, as it might inform history taking, counseling regarding pretest probability, investigations, and management strategies.

Information on health status is also important for defining areas of focus for improving health and health care. Health care in correctional facilities is largely delivered by government authorities in Canada, which makes the lack of data on some key indicators of health striking, including on mortality after release, chronic diseases, injury, and health care access and quality. Among other measures, the implementation of electronic medical records, which are still not available in correctional facilities in many jurisdictions, could facilitate the collection and management of data on many health status indicators.

The time in custody provides an opportunity to intervene to improve health, and an emerging literature on effective interventions in custody and after release suggests starting points for change,[127] such as linkage with primary care and navigation services at the time of release from custody.[152,167] Improving health in people who experience detention and incarceration is an important goal, and could lead to valuable secondary benefits for society, such as decreasing health care costs,[168] improving health in the general population,[168-173] improving public safety,[168] and decreasing re-incarceration.[168,174,175]

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Contributors

Dr Kouyoumdjian led the study and drafted the manuscript. **Drs Kouyoumdjian** and **Schuler** conducted the review and extracted data. All authors contributed to the study design and manuscript preparation.

Competing interests

None declared

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