



Opioid toxicity deaths in Black persons who experienced provincial incarceration in Ontario, Canada 2015–2020: A population-based study

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ABSTRACT

Objective: In the context of mass incarceration and the opioid toxicity crisis in North America, there is a lack of data on the burden of opioid toxicity deaths in Black persons who experience incarceration. We aimed to describe absolute and relative opioid toxicity mortality for Black persons who experienced incarceration in Ontario, Canada between 2015 and 2020.

Methods: We linked data for all persons incarcerated in provincial correctional facilities and all persons who died from opioid toxicity in Ontario between 2015 and 2020, and accessed public data on population sizes. We described the characteristics of Black persons who were incarcerated and died from opioid toxicity, and calculated absolute mortality rates, as well as age-standardized mortality rates compared with all persons in Ontario not incarcerated during this period.

Results: Between 2015 and 2020, 0.9% ($n = 137$) of 16,177 Black persons who experienced incarceration died from opioid toxicity in custody or post-release, for an opioid toxicity death rate of 0.207 per 100 person years. In the two weeks post-release, the opioid toxicity death rate was 1.34 per 100 person years. Standardized for age and compared with persons not incarcerated, the mortality ratio (SMR) was 17.8 (95%CI 16.4–23.1) for Black persons who experienced incarceration.

Conclusions: We identified a large, inequitable burden of opioid toxicity death for Black persons who experience incarceration in Ontario, Canada. Work is needed to support access to culturally appropriate prevention and treatment in custody and post-release for persons who are Black, and to prevent incarceration and improve determinants of health.

1. Introduction

United States (US) surveillance data show that the opioid toxicity crisis has increasingly affected people who are Black (Drake et al., 2020; Furr-Holden et al., 2021). Age-adjusted rates of opioid-related deaths in Black persons increased from 3.5 to 12.9 per 100,000 from 1999 to 2017 (Drake et al., 2020), with a 40% increase between 2015 and 2016 alone (Substance Abuse and Mental Health Services Administration, 2020), and with particularly large absolute and relative increases for Black persons in large urban areas between 2015 and 2017 (Lippold et al.,

2019). In addition, there have been major increases in drug toxicity death rates for Black persons during the COVID-19 pandemic (Han et al., 2022).

Substantial evidence describes mass incarceration in the US and its disproportionate and profound impacts on Black persons (Pettit and Gutierrez, 2018; Wildeman and Wang, 2017). More limited evidence indicates disproportionately high incarceration rates for Black persons in Canada: Black persons made up 9.2% of the overall population in federal custody in 2021/2022, despite making up 3.5% of the Canadian population (Office of the Correctional Investigator, 2022), and research

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found that in Ontario, Black men were five times more likely than White men to be incarcerated in a provincial correctional facility in 2010 and at least one in 14 Black men aged 18 to 34 experienced incarceration in a provincial correctional facility that year (Owusu-Bempah et al., 2023).

In this context of mass incarceration and the opioid toxicity crisis in North America, there has been a notable lack of policy or research focus on the impacts of the opioid toxicity crisis for Black persons who experience incarceration (Taylor et al., 2023). Recognizing that there are opportunities to prevent incarceration and opioid-related harms for Black persons who experience incarceration, information on the absolute and relative burden of opioid toxicity deaths in this population is valuable to inform action. In this study, we aimed to describe the number, proportion, and rates of opioid toxicity deaths in Black persons who experienced incarceration between 2015 and 2020, and to describe the characteristics of Black persons who experienced incarceration who died from opioid toxicity. In addition, we compared the opioid toxicity rate between Black persons who experienced incarceration and persons in the general population who did not experience incarceration, as an indicator of inequity.

2. Methods

The Ontario Ministry of the Solicitor General administers all correctional facilities in Ontario for adults who are on remand awaiting trial or sentencing, or who have been sentenced to less than two years in custody, and oversees and delivers health care in provincial correctional facilities. Persons sentenced to two years or more in custody are transferred to federal prisons.

As described in detail elsewhere (Butler et al., 2023), we accessed correctional data from the Ministry of the Solicitor General for all persons aged 18 and older who were detained or incarcerated in an Ontario adult provincial correctional facility between January 1, 2015 and December 31, 2020. In this paper, we use the term “incarcerated” to describe persons whether detained or incarcerated. We also accessed data from the Office of the Chief Coroner for all opioid toxicity deaths between January 1, 2015 and December 31, 2020. Opioid toxicity deaths include all sudden and unexpected deaths where an opioid was identified in post-mortem toxicology and was determined to have directly contributed to cause of death, either alone or in combination with other substances, and there is a legal obligation to report any death from opioid toxicity to a coroner in Ontario. We linked the correctional data from the Ministry of the Solicitor General with the coronial data from the Office of the Chief Coroner, using name, date of birth, and sex (Butler et al., 2023).

We analysed data for adults who were incarcerated in an Ontario provincial correctional facility at any time between 2015 and 2020, and we use the term “persons who experienced incarceration” to describe this group, recognizing that for most of the follow up period, most persons were in the community post-release and not in custody. In this paper, we focus explicitly on Black persons, given our concerns about overincarceration and health inequity, the burden of the opioid toxicity crisis in this population, and evidence-based opportunities to prevent harms. We understand race as an unscientific social category referring to the classification of people into groups based principally on physical traits or phenotypes, such as skin color, and racialization as the process through which groups come to be socially constructed as races, in order to maintain a racial hierarchy (Heritage Canada, 2021; Williams et al., 1994). Data on race were self-reported. We categorized persons as Black if they reported their race was Black across all admissions, or Black on one or more admissions and unknown or missing on any other admissions. For comparison and context, we also accessed data for other persons who experienced provincial incarceration between 2015 and 2020 (Appendix A), and for all other persons in the general population (i.e. persons “unexposed” to incarceration) using publicly available data (Statistics Canada, 2022). We calculated descriptive statistics for Black persons who experienced incarceration overall and by sex using

available demographic and correctional data, including age, marital status, cumulative time in custody, length of most recent incarceration, and number of incarcerations during the period under study (2015–2020).

Our primary outcome was death from opioid toxicity. For persons who experienced incarceration who died from opioid toxicity, we described available demographic and correctional data, and we calculated the number and rates of opioid toxicity deaths overall, by sex, and by period in custody and post-release. We calculated opioid toxicity death rates using person time as the total days of follow up, given variable periods of follow up. For persons who experienced incarceration, we calculated person time as the time from the date of their first admission to custody during the study period to the end of the study or death, whether they remained in custody or were released to the community. For the comparator group, i.e. those in the whole population who did not experience provincial incarceration between 2015 and 2020, we assumed they contributed one person year per calendar year. Persons who experienced incarceration contributed person-time to the unexposed group prior to their first admission during the study period.

We calculated age-standardized mortality ratios (SMRs) for Black persons who experienced incarceration compared with all persons with no incarceration during this period, as a ratio of observed over expected deaths. We calculated the expected number of opioid toxicity deaths using all opioid toxicity deaths for persons aged 18 and over minus those in persons who experienced provincial incarceration for numerators, and the mean age- and sex- specific Ontario population over the study period for denominators, based on Statistics Canada Census data for age and sex (Statistics Canada, 2022), which were interpolated to estimate the populations from 2015 to 2020. We calculated 95% confidence intervals (CI) for the crude death rates and for SMRs, using bootstrapping. Analyses were performed in SAS version 10.0.

The study was approved by the Hamilton Integrated Research Ethics Board, and the study met guidelines for the protection of human subjects concerning privacy.

3. Results

Between 2015 and 2020, a total of 129,152 persons experienced incarceration in provincial correctional facilities in Ontario. Of those, 16,177 persons (12.5%) were categorized as Black. An additional 17,389 persons (13.5%) had *prefer not to answer* or *unknown* indicated for self-reported race, or had no data available on race.

For Black persons incarcerated in provincial correctional facilities during this period, 1360 were female and 14,773 were male (Table 1). More than three quarters were younger than 40 years old, and less than one fifth were married or in a common law relationship. The median time in custody across all incarceration episodes between 2015 and 2020 was 60.4 (IQR 7.0–253.7) days for males and 11.4 (IQR 2.2–76.8) days for females, and the median length of the most recent incarceration was 19.2 (3.6–106.5) days for males and 6.4 (IQR 2.0–30.8) days for females.

In total, 137 of 16,177 Black persons who experienced incarceration (0.9%) died while in custody or post-release between 2015 and 2020, with a total opioid toxicity death rate of 0.207 per 100 person years (Table 1). The 1360 Black females who experienced incarceration had a mean follow up of 3.8 years, and 17 (1.3%) died from opioid toxicity either in custody or post-release within the study period, for an opioid toxicity death rate of 0.330 per 100 person years. The 14,773 Black males who experienced incarceration had a mean follow up of 4.1 years, and 118 (0.8%) died from opioid toxicity, for an opioid toxicity death rate of 0.195 per 100 person years. For those who died from opioid toxicity, the majority (71.5%) were younger than 40, the median time in custody between 2015 and 2020 was 129.8 days, and the median length of the most recent incarceration was 21.1 days.

The opioid toxicity death rate for Black persons per 100 person years was 0.06 in custody, 1.34 in the two weeks post-release, and between

Table 1

Characteristics of Black persons who experienced incarceration in provincial correctional facilities in Ontario 2015–2020, by sex and by whether they died from opioid toxicity 2015–2020.

Characteristic	Females			Males			Total ^a			
	Did not die from opioid toxicity N = 1343	Died from opioid toxicity N = 17	Total N = 1360	Did not die from opioid toxicity N = 14,655	Died from opioid toxicity N = 118	Total N = 14,773	Did not die from opioid toxicity N = 16,040	Died from opioid toxicity N = 137	Total N = 16,177	
Age ^b	18–24	436 (32.5%)	4 (23.5%)	440 (32.4%)	4756 (32.5%)	24 (20.3%)	4780 (32.5%)	5213 (32.5%)	30 (21.9%)	5243 (32.4%)
	25–39	613 (45.6%)	12 (70.6%)	625 (46.0%)	6822 (46.6%)	56 (47.5%)	6878 (46.6%)	7453 (46.5%)	68 (49.6%)	7521 (46.5%)
	40–49	193 (14.4%)	1 (5.9%)	194 (14.3%)	1903 (13.0%)	24 (20.3%)	1927 (13.0%)	2098 (13.1%)	25 (18.3%)	2123 (13.1%)
	50+	101 (7.5%)	0	101 (7.4%)	1174 (8.0%)	14 (11.9%)	1188 (8.0%)	1276 (8.0%)	14 (10.2%)	1290 (8.0%)
Marital status ^c	Married	178 (13.3%)	2 (11.8%)	180 (13.2%)	2715 (18.5%)	20 (17.0%)	2735 (18.5%)	2896 (18.1%)	22 (16.1%)	2918 (18.0%)
	Single	1165 (86.8%)	15 (88.2%)	1180 (86.8%)	11,940 (81.5%)	98 (83.1%)	12,038 (81.5%)	13,144 (82.0%)	115 (83.9%)	13,259 (82.0%)
Total days in custody 2015–2020	Mean (SD)	71.0 (149.0)	128.0 (116.8)	72.4 (148.7)	199.7 (307.5)	226.4 (288.9)	199.9 (307.3)	189.1 (299.8)	214.4 (273.5)	189.3 (299.6)
	Median (IQR)	11.2 (2.2–75.2)	11.4 (11.2–199.8)	11.4 (2.2–76.8)	59.8 (7.0–253.7)	60.4 (21.2–267.8)	60.4 (7.0–253.7)	52.1 (6.0–233.8)	53.0 (21.2–265.3)	53.0 (6.1–234.1)
Length of most recent incarceration	Mean (SD)	39.2 (93.0)	54.1 (107.3)	39.3 (93.1)	107.2 (207.7)	67.7 (94.6)	106.9 (207.1)	101.4 (201.4)	68.2 (98.4)	101.1 (200.7)
	Median (IQR)	6.2 (2.0–30.6)	7.9 (2.1–40.8)	6.4 (2.0–30.8)	19.2 (3.5–106.5)	23.6 (5.2–102.6)	19.2 (3.6–106.5)	17.9 (3.1–101.1)	21.1 (5.0–101.7)	17.9 (3.1–101.2)
Incarcerations 2015–2020	Mean (SD)	2.3 (3.3)	3.8 (3.5)	2.3 (3.3)	2.6 (2.8)	4.6 (5.1)	2.6 (2.9)	2.6 (2.9)	4.5 (4.9)	2.6 (2.9)
	Median (IQR)	1 (1–2)	3 (1–4)	1 (1–2)	2 (1–3)	3 (1–7)	1 (1–3)	2 (1–3)	3 (1–6)	2 (1–3)
Opioid toxicity death rate (deaths/100 person years)	–	–	0.330	–	–	0.195	–	–	–	0.207

^a Includes those for whom sex was not known.

^b On first admission or as of January 1, 2015.

^c Married includes persons who reported being married or in a common law relationship, and single includes those who reported they were single, separated, divorced or widowed.

0.15 and 0.50 for other post-release periods (Table 2 and Fig. 1).

Compared with persons in the Ontario population who did not experience incarceration during this period, opioid toxicity mortality rates were increased for Black persons who experienced incarceration across age groups and standardized for age (Table 3), except for Black females aged 50 years and older who experienced incarceration, as there

were no opioid toxicity deaths in this age group. The SMR was 17.8 for Black persons who experienced incarceration compared with persons who did not experience incarceration: 13.1 for Black males who experienced incarceration compared with males with no incarceration and 52.0 for Black females who experienced incarceration compared with females with no incarceration.

Table 2

Timing of death from opioid toxicity for Black persons who experienced incarceration in provincial correctional facilities and died from opioid toxicity in Ontario 2015–2020, relative to period of incarceration.

Period relative to incarceration	Females, N = 17		Males, N = 118		Total, N = 137 ^a	
	Deaths n (%)	Rate n/100 PYs	Deaths n (%)	Rate n/100 PYs	Deaths n (%)	Rate n/100 PYs
In custody	1 (5.9%)	0.37	4 (3.4%)	0.05	5 (3.7%)	0.060
0–14 days post-release	2 (11.8%)	1.93	16 (13.6%)	1.30	18 (13.1%)	1.34
15–90 days post-release	3 (17.7%)	0.65	26 (22.0%)	0.47	30 (21.9%)	0.50
91–365 days post-release	6 (35.3%)	0.53	32 (27.1%)	0.23	38 (27.7%)	0.26
>1 year post-release	5 (29.4%)	0.19	37 (31.4%)	0.14	42 (30.7%)	0.15
Unknown ^b	0	0	3 (2.5%)	0.05	4 (2.9%)	0.064

^a The total includes 2 people for whom sex was missing.

^b As these persons were released from provincial custody to a federal correctional facility or to another institution, it is not known if they were still incarcerated or had been released to the community when they died.

4. Discussion

Amid the continued overincarceration of Black persons and the ongoing opioid toxicity crisis in North America, this study highlights the burden of opioid toxicity among Black persons who experienced incarceration, using provincial incarceration data from Ontario, Canada between 2015 and 2020. We found that 0.9% of Black persons who experienced provincial incarceration between 2015 and 2020 died from opioid toxicity during this period, which represents a very high risk. The immediate post-release period was associated with particularly high risk, at 1.34 opioid toxicity deaths per 100 PYs in the two weeks post-release compared with 0.06 in custody. Black persons who experienced incarceration were 17.8 times more likely to die from opioid toxicity compared with persons with no provincial incarceration, after adjusting for age, indicating substantial inequity.

In sex-stratified analyses, we note that the SMR for Black females compared with females who did not experience incarceration, 52.0, was extremely high, and higher than the SMR for Black males compared with males who did not experience incarceration, 13.1. This finding is consistent with the association by sex in persons who are not Black who experienced incarceration (Appendix A), and likely reflects the medical and social complexity and unmet needs of females who experience

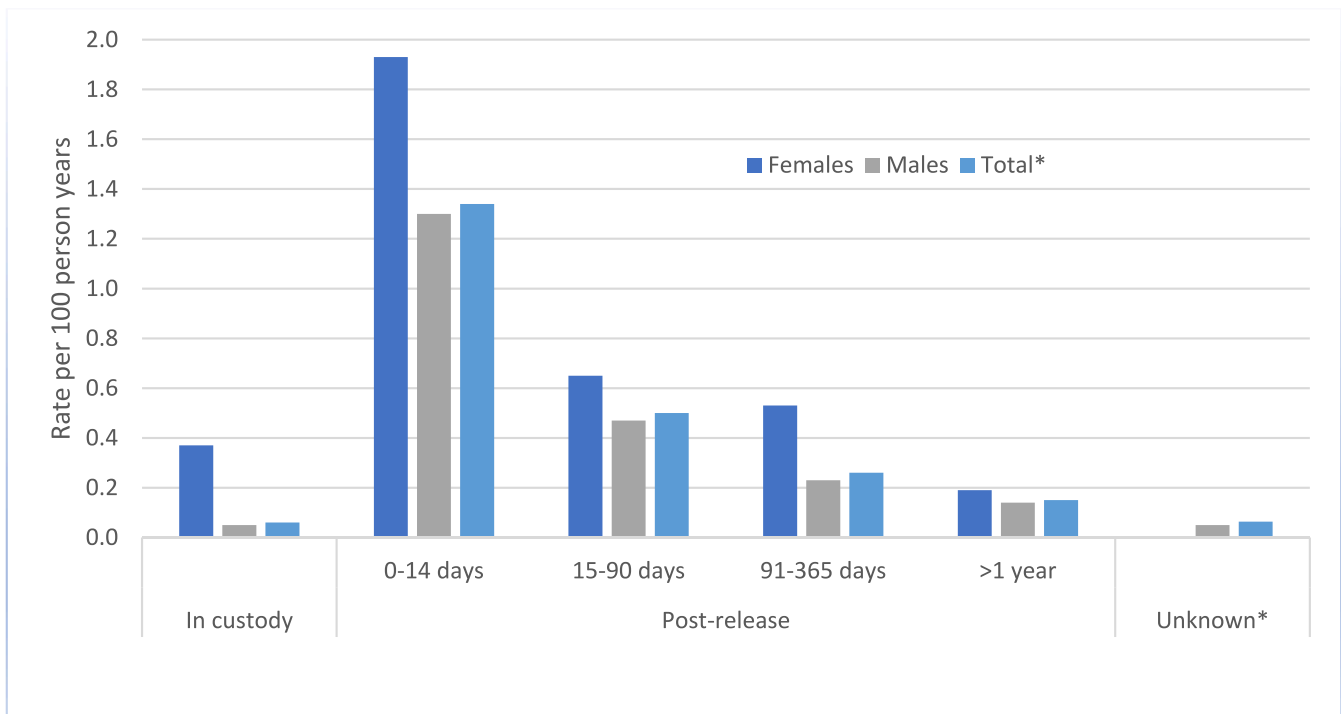


Fig. 1. Rates of death from opioid toxicity for Black persons who experienced incarceration in provincial correctional facilities 2015–2020 by period in custody or post-release, by sex.

*The unknown category for the period in custody or post-release includes data for persons were released from provincial custody to a federal correctional facility or to another institution, for whom we do not know if (or when) they were released to the community. The total category includes females, males, and 2 persons for whom sex was missing: 1 of whom died in the 15–90 days post-release and 1 of whom died in the unknown period.

Table 3

Observed opioid toxicity mortality rates for Black persons who experienced incarceration in provincial correctional facilities in Ontario 2015–2020, and expected deaths^a and age-standardized mortality ratios,^b by sex.

Demographic group	Persons with no provincial incarceration 2015–2020		Black persons who experienced provincial incarceration 2015–2020			Age-standardized mortality ratio (95% CI)
	Death rates per 100 years at risk		Observed deaths	PYs at risk	Expected deaths ^a	
Males	18–24	0.00896	24	19,817.7	1.78	13.1 (10.8–15.5)
	25–39	0.01918	56	28,422.2	5.45	
	40–49	0.01672	24	7890.5	1.32	
	50+	0.01000	14	4637.5	0.46	
	18–24	0.00443	4	1623.4	0.07	
Females	25–39	0.00747	12	2369.8	0.18	52.0 (30.0–77.2)
	40–49	0.00742	1	790.1	0.06	
	50+	0.00516	0	374.7	0.02	
	18–24	0.00674	30	21,536.8	1.45	
	25–39	0.01316	68	30,880.6	4.06	
Total ^c	40–49	0.01187	25	8690.8	1.03	17.8 (16.4–23.1)
	50+	0.00744	14	5013.8	0.37	

^a Based on rates for all persons in Ontario with no incarceration.

^b Compared with all persons in Ontario with no incarceration.

^c The total includes 2 people for whom sex was missing.

incarceration, which has been identified in other research (Abbott et al., 2017; Breuer et al., 2021; Day et al., 2018; Hawton et al., 2014). For Black females who experience incarceration, multiple layers of marginalization, i.e. race, gender, and incarceration history, present a unique challenge.

There is an urgent need for interventions to address the high opioid toxicity death burden in Black persons who experience incarceration, both upstream to address systemic and structural factors and downstream to mitigate the proximal risk factors for death. Upstream factors that contribute to risk of opioid toxicity death (as well as other adverse health outcomes) include inadequate housing and homelessness, unemployment, poverty, criminal justice system involvement, sexism, and

systemic and structural racism, and downstream factors include inequitable access to culturally appropriate harm reduction and treatment services (Banks et al., 2023; Godkhindi et al., 2022; Nguemo Djioetio et al., 2020; Substance Abuse and Mental Health Services Administration, 2020). To support effectiveness and acceptability, interventions should be comprehensive, community-based and developed in partnership with Black communities, multisectoral, and culturally appropriate, e.g. involving trusted persons conducting health promotion and delivering services including harm reduction (Banks et al., 2023; Friedman et al., 2021; Godkhindi et al., 2022; Nguemo Djioetio et al., 2020; Substance Abuse and Mental Health Services Administration, 2020), and should build on best practices (Beausoleil et al., 2017; Public Health

Ontario, 2023). Given the large amount of time spent in custody over the study by many Black persons who died (with a median of 3 weeks for most recent incarceration and a total of 4 months between 2015 and 2020), time in custody may present opportunities to deliver interventions or to link with community-based programs. In addition, the very high risk of death in the weeks post-release, as identified in prior research on drug toxicity deaths in people who experience incarceration (Binswanger et al., 2007; Leach and Oliver, 2011; Ranapurwala et al., 2022), indicates the need to focus interventions around the time of release, while the high risk of opioid toxicity death identified across all periods relative to incarceration signals the need to address risks on an ongoing basis.

This study is descriptive, and was not designed to elucidate causal associations that lead to increased opioid toxicity risk for Black persons who experience incarceration. Defining the risk of opioid toxicity death for Black persons who experience incarceration is valuable for understanding the population-specific burden, and important to justify enhanced efforts to include and reach Black persons who experience incarceration with specific, tailored interventions. To describe inequity, we compared persons who were Black who experienced incarceration with all persons who did not experience incarceration during the same period, which represents a valid reference group for this purpose. We were not able to compare risks for Black persons who did and who did not experience incarceration, however, as we did not have access to self-reported race data for persons who did not experience incarceration, and therefore cannot clearly define the interaction between race and incarceration (which would be beyond the scope of our objectives). We provided data for context on the risk of opioid toxicity death for persons who were not Black who experienced incarceration (Appendix A), and we note that SMRs for this group compared to persons who did not experience incarceration were similar (with overlapping confidence intervals) or higher than SMRs for Black persons who experienced incarceration, indicating the high burden for both these population groups. We recognize that mechanisms leading to increased risk of opioid toxicity death for persons who experience incarceration are complex (Joudrey et al., 2019) and reflect historical and contemporary issues, including structural racism for Black persons in particular, and that incarceration likely represents a marker of risk as well as a risk factor for opioid toxicity death.

4.1. Study strengths and limitations

We accessed whole population data for a six-year time period, which includes the fentanyl-dominant era, and this study fills an important gap in knowledge about opioid toxicity death in Black persons who experience incarceration. We used self-reported data on race to categorize people as Black, though given that race data were not available for a substantial proportion (13.5%) of the population and that the missingness may be non-random and may disproportionately include persons who are Black, these data may underestimate the burden of opioid toxicity deaths for Black persons who experience provincial incarceration. In addition, we acknowledge that the level of risk of opioid toxicity death would vary substantially across persons who are Black who experienced incarceration given the heterogeneity of this population. Additional data on risk and protective factors and other social determinants, including substance use disorders, ethnicity, and history of immigration, would be valuable in future studies building on relevant work (Substance Abuse and Mental Health Services Administration, 2020), and to inform interventions for those at highest risk. While US

data suggest lower rates of substance use disorders in Black immigrants compared to African-Americans who are not immigrants (Broman et al., 2008), limited Canadian data suggest that specific types of stress may increase substance use, for example, related to acculturation and social isolation, in some immigrants (Nguemo Djioetio et al., 2020). Given the small population sizes, especially for age strata or by period relative to incarceration for females in sex-stratified analyses, rates may be unstable, and we specifically decided to not examine trends over time in our analyses based on considerations of power. Finally, we examined only deaths from opioid toxicity, and we recognize that other causes of death would compete with death from opioid toxicity, which would lead to an underestimate of risk; a comprehensive assessment of rates and causes of death for Black persons who experience incarceration would be valuable.

5. Conclusions

This study identifies an alarmingly high number of Black, mostly young, persons dying from opioid toxicity during and following incarceration in Ontario, the most populous province in Canada. Further attention is necessary regarding interventions to mitigate risk, both in custody and elsewhere in the community, ranging from a focus on upstream systematic and structural factors to downstream factors such as access to treatment and harm reduction services, and should be developed in partnership with Black communities. Additional data to elucidate causal associations and understand individual-level risk and structural determinants of risk would be valuable to inform resourcing of interventions.

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CRediT authorship contribution statement

Akwasi Owusu-Bempah: Conceptualization, Methodology, Writing – original draft. **Harvey L. Nicholson:** Methodology, Writing – review & editing. **Amanda Butler:** Methodology, Writing – review & editing. **Ruth Croxford:** Methodology, Software, Formal analysis, Writing – review & editing. **Fiona G. Kouyoumdjian:** Conceptualization, Methodology, Writing – original draft, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A. Opioid toxicity mortality rates for Black persons who experienced incarceration, all other persons who experienced incarceration, and persons with no incarceration in provincial correctional facilities in Ontario, Canada 2015–2020, and mortality ratios compared with persons with no incarceration, by age group and sex

Indicators	Age group	Black persons who experienced provincial incarceration 2015–2020		All persons not categorized as Black who experienced provincial incarceration 2015–2020		All persons who did not experience provincial incarceration 2015–2020	
		Females	Males	Females	Males	Females	Males
Mortality rate (deaths/100 person years)	18–24	0.246	0.121	0.377	0.348	0.00443	0.00896
	25–39	0.506	0.197	0.614	0.542	0.00747	0.01918
	40–49	0.127	0.304	0.545	0.501	0.00742	0.01672
	50+	0 ^a	0.302	0.327	0.324	0.00516	0.01000
Mortality ratios (95% CI)	18–24	55.6 (13.0–115.2)	13.5 (7.9–19.2)	85.0 (63.4–109.4)	38.8 (34.2–43.3)	Ref	Ref
	25–39	67.8 (34.1–106.4)	10.3 (7.6–13.2)	82.2 (70.7–94.5)	28.3 (26.5–30.3)	Ref	Ref
	40–49	17.1 (0–55.7)	18.2 (10.8–25.8)	73.5 (55.6–92.7)	29.9 (26.9–33.0)	Ref	Ref
	50+	0 ^a	30.2 (15.9–46.1)	63.3 (38.3–89.9)	32.4 (28.0–36.5)	Ref	Ref
	Total, age-standardized (SMR)	52.0 (30.0–77.2)	13.1 (10.8–15.5)	79.3 (70.6–88.2)	30.3 (28.9–31.8)	Ref	Ref

^a No opioid toxicity deaths occurred in Black females aged 50+ who experienced provincial incarceration.

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