

1. Introduction

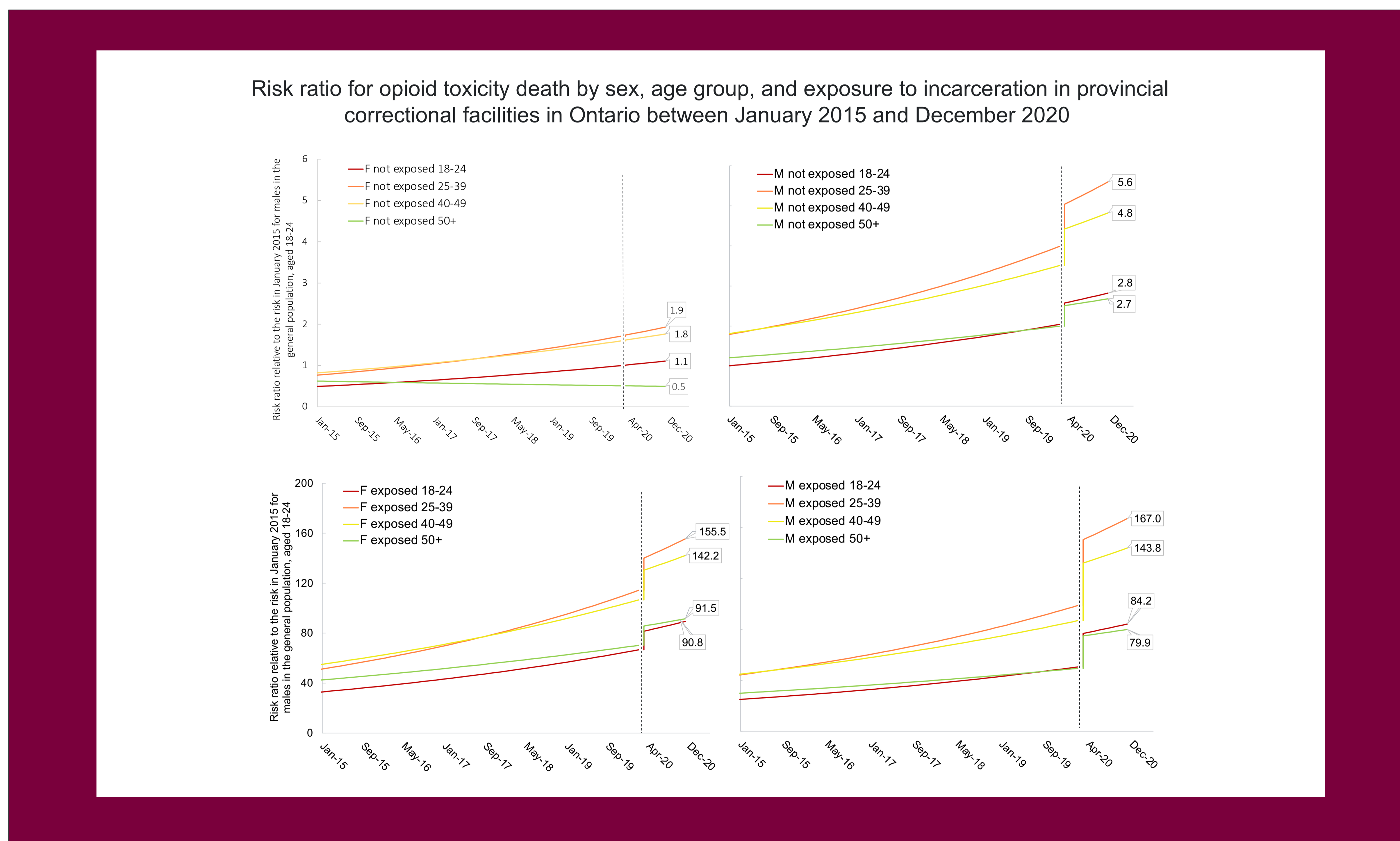
People are at a greatly increased risk of death following release from incarceration, in part due to increased rates of death from drug toxicity. The emergence of COVID-19 has been associated with increases in substance use and drug-related deaths in North America (1). Proposed mechanisms for this effect include pandemic-related restrictions that decreased service capacity and availability for people who use drugs, border restrictions that contributed to a more volatile drug supply, and stress, social isolation, worsening mental health and feelings of despair which may contribute to risk of drug-related death (2,3). In correctional facilities, measures included increased time in cells, restrictions on programming and limited visits and social interactions (4) which may have contributed to worsened mental health and negatively affected the transition to community on release.

This study aimed to estimate the impact of the COVID-19 pandemic and related restrictions in 2020 on opioid toxicity mortality for people who experience incarceration using a population level cohort over a 6-year period, and to compare with people who did not experience incarceration.

2. Methods

We conducted a retrospective cohort study for the period January 1, 2015, to December 31, 2020. We accessed and linked coronial data on all opioid toxicity deaths in Ontario, Canada with correctional data for people aged 18 years and older who were detained or incarcerated in an Ontario provincial correctional facility. We used data from the Statistics Canada Census to calculate general population rates.

We used an interrupted time series design and segmented regression to examine change in the level or rate of increase in deaths due to opioid toxicity coinciding with the imposition of COVID-19-related restrictions. We also compared the impact of COVID-19 restrictions on opioid toxicity death rates for people exposed to incarceration and for others in the general population not exposed to incarceration stratified by age and sex. COVID-19 restrictions were treated as an event beginning April 1, 2020.



3. Results

Rates of opioid toxicity death increased with a linear upward slope in both persons exposed to incarceration and those not exposed over the entire study time period. The start of COVID-19 restrictions coincided with a marked upward shift in the trend lines (*i.e.*, change in level but not slope), with modification of the effect of COVID-19 by both sex and exposure to incarceration. Compared to pre-COVID-19 for the general population, the rate ratio (RR) was 1.25 (95%CI 1.13-1.38) for males and not significant for females. For persons exposed to incarceration, the RR was 1.51 (95%CI 1.35-1.69) for males and 1.22 (95%CI 1.06-1.42) for females. The highest risk period for death from opioid toxicity was in the first 30 days following release from custody.

4. Discussion

COVID-19 substantially exacerbated the risk of opioid toxicity death, with a greater impact on people who experienced incarceration compared to people who did not. The rate of increase of risk over time did not change. Consistent with pre-pandemic studies females exposed to incarceration were found to be a greater risk of death from opioid toxicity compared to other females in the general population. Males who experienced incarceration were most significantly affected by COVID-19 in terms of the absolute increased risk of opioid-related death. As part of a broader public health agenda to address the health harms of incarceration, future emergency preparedness efforts should explicitly consider the prison setting and the needs of people who experience incarceration in custody and after release.



This paper is currently under review. For more information or to receive a copy of the final publication please contact:
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