

Chronic pain is associated with non-fatal overdose in people who inject drugs: Longitudinal cohort study in Montreal, Canada, 2017-2025

Sarah Larney^{1,2}, Geng Zang^{2,3}, M. Gabrielle Pagé^{2,3}, Adelina Artenie^{2,3}, Nanor Minoyan^{2,3}, Harika Dasari^{2,3}, Farzaneh Vakili^{2,3}, Sasha Udhesister^{2,3}, Valérie Martel-Laferrrière^{2,3}, Julie Bruneau^{2,3}

¹ Burnet Institute, ² Centre de recherche du CHUM, ³ Université de Montréal

Presenter's email: sarah.larney@burnet.edu.au

Introduction: Chronic pain prevalence is elevated among people who inject drugs. Given reciprocal links between chronic pain and opioid use, we hypothesised that chronic pain is associated with non-fatal overdose in this population.

Methods: Data were collected 2017-2025 as part of the HEPatitis COhort (HEPCO) study based in Montreal, Canada. Participants were aged ≥ 18 years and reported recent injecting drug use at baseline. Study visits were scheduled every three months. We developed Poisson regression models to analyse the association between chronic pain (pain lasting ≥ 3 months) and experiencing a non-fatal overdose in the past three months, adjusting for gender, age, unstable housing, psychological distress, alcohol consumption, and year. Lagged chronic pain was used in a secondary analysis to explore the prospective effect of pain on overdose risk.

Results: The analytic sample included 4,790 visits by 887 participants (18% women, median 45 years at baseline). At baseline, 47% of participants reported chronic pain, and 12% a non-fatal overdose in the past 3 months. In unadjusted analyses, chronic pain was associated with non-fatal overdose (prevalence ratio (PR) 1.50; 95% confidence interval (CI) 1.20-1.87); the magnitude of the association attenuated slightly following adjustment (adjusted PR (aPR) 1.39; 95% CI 1.11-1.75). For the secondary (lagged) analysis, the aPR was 1.51 (95% CI 1.17-1.95).

Discussions and Conclusions: In a cohort of people who inject drugs, chronic pain was associated with an increased risk for non-fatal overdose. There appears to be a prospective aspect to this association, but it is likely that this finding reflects bi-directional influences: chronic pain increases the likelihood of using drugs in ways that increase overdose risk while in search of pain relief, and drug withdrawal induces pain, potentiating further use and acting as a barrier to moderation or cessation.

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