

Correlates of non-fatal opioid overdose among a cohort of people who inject drugs in Melbourne, Australia

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Background

Many people who inject drugs (PWID) are at risk of non-fatal opioid overdose (OOD). Opioid overdose is a major public health problem globally, with overdose incidence and mortality from overdose increasing at rapid rates in North America¹, with similar trends emerging and associated with morbidity and mortality in Australia^{2,3}.

PWID are a key risk group for OOD, with opioid overdose mortality estimated at 0.65 per 100 PY⁴ and non-fatal overdose is also prevalent in this population^{5,6}.

In this study we use data from SuperMIX, a cohort study of PWID, to identify the correlates of ever and recent opioid overdose of PWID in Melbourne.

Aim 1: Describe trends in the prevalence of OOD within the SuperMIX cohort

Aim 2: Identify correlates of 'ever' and 'recent' reporting of OOD across the period of observation

Design and Methods

Cohort: 757 PWID recruited from street-based settings in Melbourne, who injected heroin or methamphetamine ≥ 6 times in the previous 6 months (3,635 annual interview, 2008-2017)

Data: 3610 observations (n=751) where recent injection drug use (IDU, defined as past-month injection of heroin or other opioids) was reported and overdose data was not missing

Outcomes: 'Ever' or 'recent' (defined as past 6 month/since last seen) opioid overdose

Exposures: Socio-demographics, substance use, risk environment, self-reported access to health services

Data analysis: Descriptive statistics, logistic regression (binary/ordinal)

Results

Sample characteristics:

- 66% male
- 79% Australian-born
- Median age at baseline interview 27.9yrs [IQR: 24.6yrs – 30.0yrs]
- At baseline:
 - 74% most commonly injected heroin
 - 10% other opioids
 - 11% methamphetamine

Table 1: Correlates of ever opioid overdose at baseline

Variable		OR, 95% CI	p-value	aOR*, 95% CI	p-value
Recruitment method	RDS	1		1	
	Other snowball	1.11 (0.80-1.53)	0.535	1.12 (0.79-1.58)	0.518
	Prev Networks	1.82 (1.16-2.86)	0.009	1.57 (0.94-2.61)	0.084
Age group	<20	1		1	
	20-24	1.32 (0.60-2.93)	0.490	1.37 (0.60-3.14)	0.460
	25-29	2.10 (0.98-4.48)	0.055	2.62 (1.19-5.80)	0.017
	≥ 30	3.19 (1.46-6.98)	0.004	3.62 (1.58-8.26)	0.002
Frequency of alcohol consumption	Never	1		1	
	Once a month	1.18 (0.74-1.89)	0.488	1.05 (0.63-1.74)	0.838
	2-4 times a month	1.51 (1.00-2.28)	0.051	1.35 (0.86-2.12)	0.195
	2-3 times a week	1.37 (0.83-2.26)	0.231	1.36 (0.80-2.31)	0.260
	4+ times a week	2.02 (1.36-3.01)	0.001	1.83 (1.19-2.82)	0.006
Ambulance seen in last month	No	1		1	
	Yes	2.81 (1.57-5.03)	0.001	2.07 (1.01-4.28)	0.04

* After adjustment for sex, country of birth, incarceration history, benzodiazepine use and recent access to: emergency departments, inpatient hospital care, general practitioners, psychologists, psychiatrists and AOD counselling; which were all non-significant

Prevalence of ever or recent OOD among the cohort

- Prevalence of ever opioid overdose at baseline was 42%
- Prevalence of recent opioid overdose was 23%
- Prevalence of ever overdose (prior to or during the study) was 52%

Correlates of non-fatal overdose

- Ever opioid overdose at baseline:
 - Participants recruited by other snowball methods or through the previous Networks II study, older participants, participants reporting more frequent alcohol use and those who had recently accessed ambulance services had higher odds of ever non-fatal OOD
- Recent opioid overdose:
 - Participants reporting more frequent alcohol use and those who had recently accessed ambulance services had higher odds of recent non-fatal OOD

Table 2: Correlates of recent opioid overdose

Variable		OR, 95% CI	p-value	aOR*, 95% CI	p-value
Frequency of alcohol consumption	Never	1		1	
	Once a month	1.35 (0.91-2.01)	0.133	1.56 (0.63-3.86)	0.336
	2-4 times a month	1.58 (1.14-2.20)	0.007	1.42 (0.64-3.13)	0.385
	2-3 times a week	1.38 (0.93-2.05)	0.109	1.51 (0.60-3.80)	0.376
	4+ times a week	1.92 (1.41-2.62)	<0.001	2.83 (1.42-5.63)	0.003
Ambulance seen in last month	No	1		1	
	Yes	8.33 (6.19-11.21)	<0.001	10.9 (4.28-27.80)	<0.001

* After adjustment for sex, benzodiazepine use and recent access to: emergency departments, inpatient hospital care, IDU specific primary care, psychologists, psychiatrists and AOD counselling; which were all non-significant

Conclusions

- Among the cohort of regular injectors, 23% reported recent heroin or other opioid overdose and 42% reported heroin or other opioid overdose at baseline, similar rates of overdose in other Australian sampled PWID⁷
- We identified a range of factors related to opioid overdose experience in the SuperMIX cohort at baseline and at follow up, with significant findings related to frequency of alcohol consumption and recent access of ambulance services
- Further research is needed to understand how these patterns vary over time in the cohort

References

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