

# Dose-Response Relationships between Self-reported Frequency of Methamphetamine Use and Crime-related Behaviours among People Using Methamphetamine Recruited in Metropolitan and Regional/Rural Victoria, Australia

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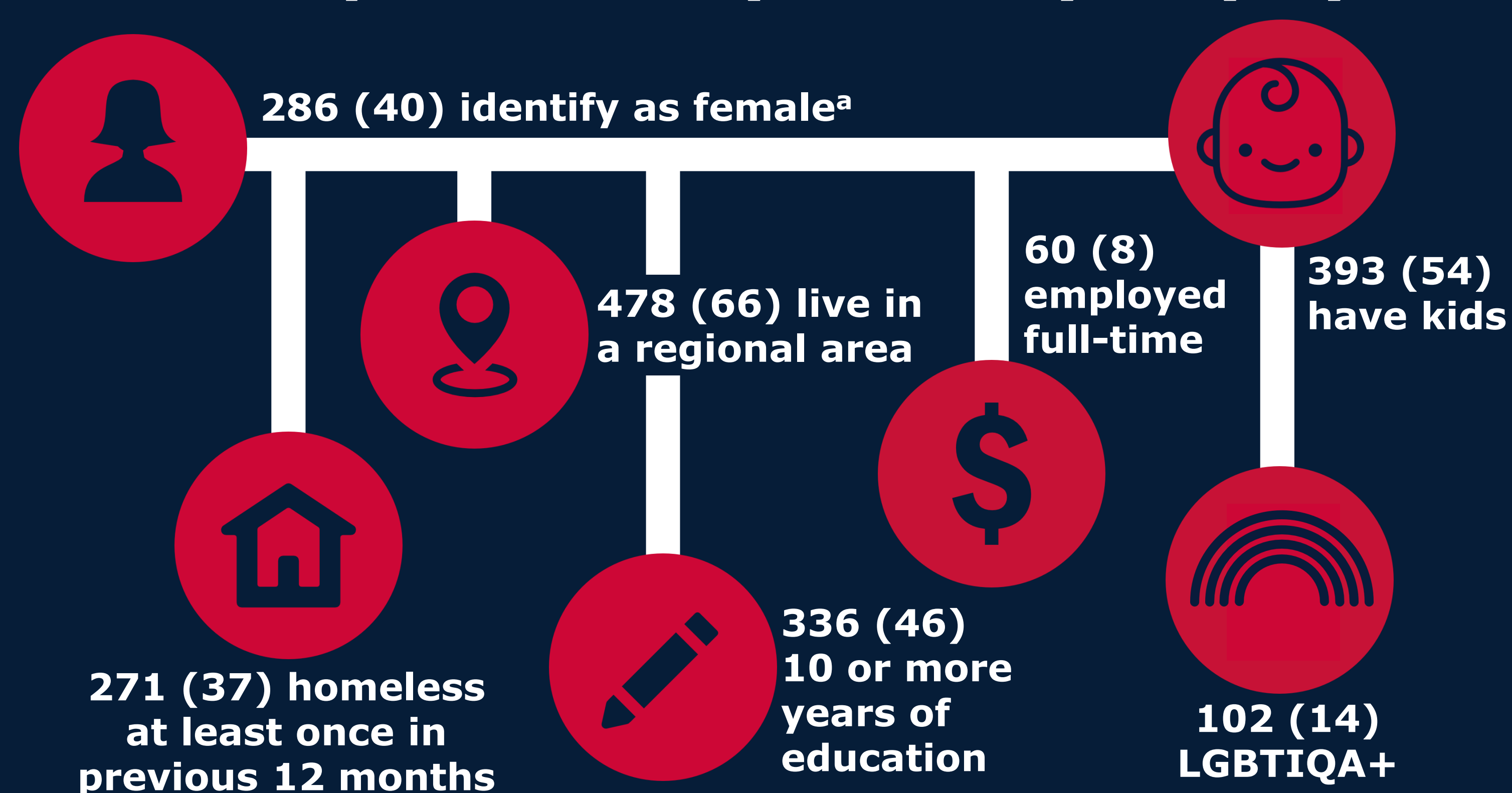
## Background

- Between 2001-2016, 7.6% of Australians aged 18+ reported use of methamphetamine<sup>2</sup> ('speed' powder, 'ice', 'P'). Methamphetamine use is associated with significant physical and psychological harms, including involvement in crime-related behaviours<sup>3</sup>. Methamphetamine-related harms have been shown to increase with frequency and quantity of use<sup>4</sup>.
- Limited research has explored associations between specific methamphetamine consumption patterns (e.g., use frequency) and criminogenic outcomes.
- The aim of this study was to investigate possible dose-response relationships between self-reported frequency of methamphetamine use and specific crime-related behaviours in a cohort of people using methamphetamine recruited from metropolitan and regional/rural areas in Victoria, Australia.

## Study Design and Method

- The VMAX Study comprises a prospective cohort of 727 people who regularly used methamphetamine and resided in Melbourne or three non-metropolitan areas of Victoria, Australia, at recruitment. Participants are interviewed every six months for three years. Baseline data are used for this study.
- Involvement in crime-related behaviours was taken from the Opioid Treatment Manual crime scale, including fraud, selling drugs, property-related crime, and involvement in violent crime. Additional criminal activities were taken from questions related to drug driving (i.e., driving within three hours of taking an illicit substance) and being physically violent toward somebody.
- We generated an independent categorical variable for methamphetamine frequency of use with three levels: 'low' (1-2 days/week in the last month; any route of administration), 'medium' (3-4 days), and 'high' (5-7 days).
- We conducted a series of multivariate logistic regression models. Significance was considered  $p < .05$ .

## Sample Profile (N = 727); n (%)



## Crime and Substance Use Characteristics

Variable	n (%)	Variable	n (%)
High risk alcohol consumption	163 (22)	Age at first methamphetamine use (Mean, SD)	19.38 (6.23)
Drug of choice		First methamphetamine used	
Amphetamine	441 (61)	Speed	549 (76)
Cannabis	132 (18)	Base	9 (1)
Opiates	47 (7)	Ice	169 (23)
Other	105 (14)		
Ever injected	388 (53)	Main methamphetamine used	47 (6)
Age first injected (M, SD)	21.08 (7.39)	Speed	1 (<1)
Recent injection (last 12 months)	291 (75)	Base	674 (94)
		Ice	
Crime-related behaviours			401 (55)
Drug driving	26 (3.58)	Daily tobacco use	176 (24)
Fraud	332 (46)	Daily cannabis use	
Selling drugs	184 (25)		
Property-related crime	48 (7)	Arrested in last 12 months	307 (42)
Violent crime	177 (24)	History of incarceration	202 (28)
Physically violent	423 (58)		
Any crime	404 (79)		

## Logistic Regression Results

Outcome	Unadjusted OR	Adjusted OR
Drug driving (n = 453)		
Medium (3-4 days)	1.60 (0.95-2.69)	1.60 (0.94-2.72)
High (5-7 days)	6.40 (3.11-13.17)***	6.68 (3.24-13.77)***
Fraud (n = 637)		
Medium	2.41 (0.59-9.76)	2.52 (0.64-9.88)
High	6.84 (1.96-23.85)**	8.46 (2.49-28.78)***
Selling drugs (n = 638)		
Medium	1.45 (0.99-2.12)	1.48 (1.00-2.18)*
High	3.05 (2.06-4.51)***	3.07 (2.05-4.59)***
Property related crime (n = 637)		
Medium	1.23 (0.78-1.95)	1.26 (0.79-2.02)
High	2.48 (1.61-3.82)***	2.40 (1.52-3.77)***
Violent crime (n = 638)		
Medium	1.29 (0.59-2.81)	1.27 (0.57-2.81)
High	1.61 (0.76-3.41)	1.32 (0.57-3.03)
Physically violent (n = 639)		
Medium	1.16 (0.73-1.84)	1.10 (0.69-1.77)
High	1.91 (1.23-2.95)**	1.76 (1.12-2.79)*
Any crime (n = 639)		
Medium	1.52 (1.04-2.21)*	1.58 (1.06-2.34)*
High	4.09 (2.69-6.25)***	4.07 (2.64-6.32)***

**Note:** The reference category for all models is low frequency methamphetamine use (1-2 days/week). All models adjusted for age (continuous), gender (male/female), years of education completed (10 or less/more than 10), employment status (employed/unemployed), Aboriginal and/or Torres Strait Islander identification (yes/no), recruitment site (metro vs regional), high-risk alcohol use (at least two drinking events/week and consuming at  $\geq 5$  drinks during each event; yes/no), recent heroin use (yes/no); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

## Discussion and Implications

- Our findings indicate self-reporting a higher rate of methamphetamine use trends towards an increased likelihood of reporting involvement in certain crime-related behaviours. We found dose-response relationships between self-reported methamphetamine use frequency and: selling drugs, drug driving, being physically toward someone, committing property related offence, and any crime.
- Harm reduction measures and approaches to treatment focusing on relatively minor decreases in use (e.g., 1-2 days/week) may assist in the prevention of these harms
- Future research, including further longitudinal analyses of findings from the VMAX Study, could determine nuanced associations between frequency of methamphetamine use and crime-related behaviours (e.g., differences in routes of administration).

<sup>a</sup> Two people identified as neither male or female.

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