

# Benzodiazepine use amongst a sample of people that inject illicit drugs in Canberra, ACT, prior to and during the COVID-19 pandemic.

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## Key Findings

- Past 6-month benzodiazepine use has been decreasing over time amongst our sample of people that inject illicit drugs in Canberra, ACT, however a small increase of use was observed in 2020 (during the first wave of COVID-19 restrictions), before decreasing again in 2021 to comparable levels observed in 2019.
- We found that past 6-month use of heroin was associated with non-prescribed benzodiazepine use in 2020 and 2021 and those using non-prescribed benzodiazepines in 2021 were more likely to have engaged in past month criminal activity.

## Background

Benzodiazepines are commonly prescribed to treat psychological distress, in particular anxiety and panic disorders, and insomnia. In 2019-20, 1.5 million people in Australia were prescribed benzodiazepines (1). Recent research has found that the COVID-19 pandemic and the first wave of COVID-19 restrictions in Australia has led to elevated psychological distress, including depression, stress and anxiety (2). In some countries it has been documented that there has been an increase in the prescribing of benzodiazepines throughout the pandemic (3), while in others it has remained stable or fluctuated (4,5).

However, less is known about the changes in the use of non-prescribed benzodiazepines throughout the pandemic and whether there has been any change of the characteristics of people using these substances (5). A study of 881,134 urine specimens in Columbia found that there was a 4% decrease in non-prescribed benzodiazepine use ( $p < 0.02$ ) during COVID-19 (6), whilst a study looking at google trends in India found that after banning alcohol during the COVID-19 lockdown, an increase in online searches for benzodiazepines was observed (7).

Previous research has shown that non-prescribed benzodiazepine use is elevated among certain groups, such as people who inject drugs and/or people receiving opioid agonist therapy (OAT) (8), and that use can be associated with criminal activity (8,9), overdose (10), heroin and methamphetamine use (9, 11, 12), and injection related problems (11,13). However, it is unclear whether there have been any changes in the factors associated with non-prescribed benzodiazepine use throughout the pandemic. With this in mind, we used data from a sample of people who regularly inject illicit drugs in Canberra, Australian Capital Territory (ACT), to examine:

- i) Trends in the prescribed and non-prescribed benzodiazepine use from 2007-2021.
- ii) Characteristics associated with non-prescribed benzodiazepine use in 2019 ('pre-COVID'), 2020 (during first wave of COVID) and 2021 (after majority of the restrictions were lifted).

## Methods

Data were collected via interviews with people in Canberra, ACT, who regularly inject illicit drugs and took part in the Illicit Drug Reporting System (IDRS). Approximately 100 participants were recruited per year through health services and word-of-mouth. To be eligible, participants must be at least 18 years of age (17 in 2019 and prior years), have lived in Canberra for 10 months out of 12 months preceding the interview and to have injected illicit drugs on at least a monthly or more frequent basis in the last six months (14).

Since 2007, participants have been asked about their use of prescribed and non-prescribed benzodiazepines. From 2011 onwards, benzodiazepines were separated into two forms: alprazolam (e.g. Xanax, Kalma) and 'other benzodiazepines' (e.g. Valium, Serepax). For the purpose of this bulletin, Alprazolam and other benzodiazepines were combined to compute 'any' benzodiazepine use in the preceding six months. However, median days of alprazolam and other benzodiazepine use cannot be combined due to the possibility of overlap, and so data are presented separately for frequency of use.

Binary logistic regression (significance level set at  $p < 0.05$ ) was used to identify differences among those who had used non-prescribed benzodiazepines and those who had not, in 2019, 2020 and 2021. These three years were selected to capture 'pre-COVID' (2019), and during COVID (2020 and 2021). It is important to note that surveys in 2020 took place between June-August, during the first wave of the pandemic. The surveys in 2021 took place in mid-June when the Delta-wave of cases was just beginning (peak daily cases in Australia during interview period: 261) and before the emergence of the Omicron variant. Indeed, at the time of the 2021 surveys there were no jurisdictional specific restrictions in the ACT.

## Results

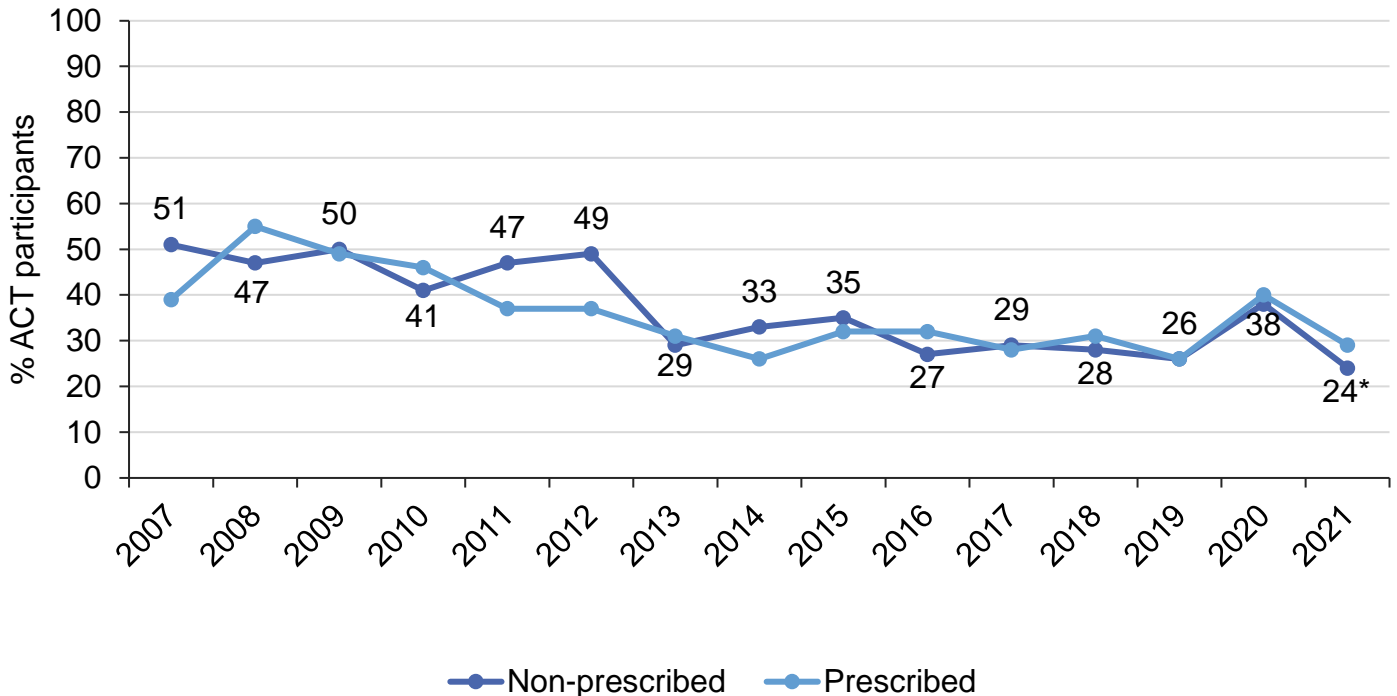
Past 6-month use of both prescribed and non-prescribed benzodiazepines have decreased over time, from 39% and 51%, respectively, in 2007 to 29% and 24%, respectively, in 2021 (Figure 1). However, chi-square analysis revealed a significant increase in prescribed use, from 26% in 2019 to 40% in 2020 ( $p = 0.035$ ), before decreasing again in 2021 (29%) returning to similar levels observed in 2019. In addition, a non-significant increase was observed in non-prescribed use, from 26% in 2019 to 38% in 2020 ( $p = 0.069$ ), before decreasing significantly to 24% in 2021 ( $p = 0.032$ ) also returning to levels comparable to 2019 (Figure 1).

Median days of non-prescribed use have ranged between 2-20 days for alprazolam and 3-18 days for other benzodiazepines between 2011-2021 (Figure 2). The frequency of use was low, ranging between 2-5 days between 2019 and 2021 for both alprazolam and other benzodiazepines (Figure 2).

Regression models revealed no characteristics or drug-related behaviors being associated with past 6-month use of non-prescribed benzodiazepines in 2019 (Table 1). However, in 2020 and 2021 we found that non-prescribed benzodiazepine use was associated with past 6-month heroin use ( $p = 0.025$  and  $p = 0.039$ , respectively). In addition, past month criminal activity was significantly associated with non-prescribed benzodiazepine use in 2021 ( $p = 0.032$ ) (Table 1).

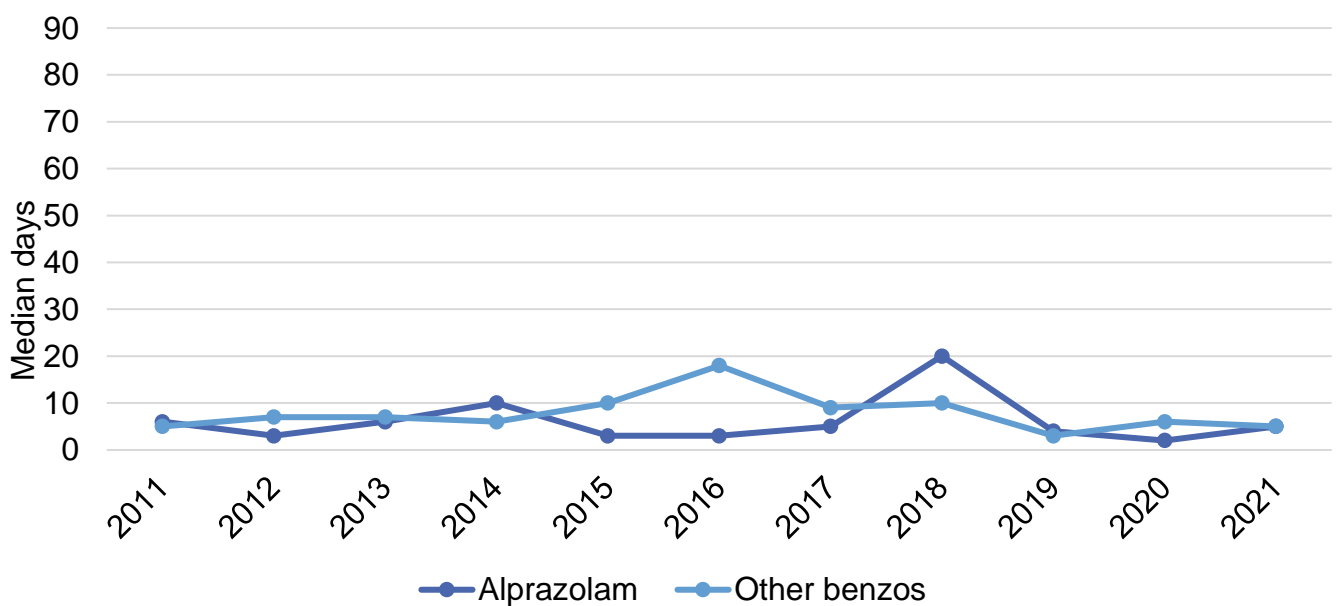
## Results Cont.

**Figure 1: Past 6-month use of non-prescribed and prescribed benzodiazepines, IDRS sample, ACT, 2007-2021**



Note. Benzodiazepines were separated into prescribed and non-prescribed forms in 2007.

**Figure 2. Frequency of use of non-prescribed alprazolam and other benzodiazepines, IDRS sample, ACT, 2011-2021**



Note. Benzodiazepines were separated into alprazolam and other benzodiazepines in 2011. Y-axis reduced to 90 days to improve visibility.

## Results Cont.

**Table 2: Factors associated with non-prescribed benzodiazepines use, IDRS sample, Canberra, 2019-2021**

	2019			2020			2021		
	Yes (n=26)	No (n=73)	p value (OR)	Yes (n=38)	No (n=62)	p value (OR)	Yes (n=24)	No (n=76)	p value (OR)
<b>Demographics</b>									
Median age (years; IQR)	45 (38-49)	46 (39-49)	0.314 (0.972)	44 (37-50)	44 (39-50)	0.434 (0.983)	43 (39-52)	45 (39-50)	0.709 (1.010)
Male (%)	73%	74%	0.929 (0.955)	53%	57%	0.709 (0.857)	63%	71%	0.431 (0.679)
Any paid employment (%)	12%	10%	0.777 (1.230)	18%	13%	0.455 (1.524)	13%	12%	0.931 (1.063)
<b>Well-being &amp; drug related behaviours</b>									
Past 6-month experience of anxiety and panic	39%	32%	0.519 (1.359)	24%	13%	0.192 (2.017)	-	18%	0.793 (1.165)
Median K10 score (past month)	26	23	0.088 (1.038)	24	21	0.271 (1.123)	25	23	0.120 (1.042)
Past 12-month drug overdose (%)	12%	22%	0.257 (0.465)	18%	10%	0.214 (2.108)	8%	15%	0.441 (0.537)
Past month criminal activity (%)	50%	38%	0.268 (1.667)	47%	28%	0.057 (2.306)	44%	20%	<b>0.032 (3.022)</b>
Past month distributive or receptive sharing of needles (%)	-	14%	0.829 (0.859)	18%	15%	0.606 (1.330)	-	12%	0.542 (1.489)
Past month of sharing other injecting equipment (%)	-	-	0.686 (1.437)	29%	27%	0.869 (1.078)	-	20%	0.929 (1.053)
Past 12-month online purchasing	-	0%	/	-	-	0.851 (0.792)	-	-	0.720 (1.565)
<b>Drug use &amp; treatment</b>									
Past 6-month of any heroin use (%)	77%	77%	0.983 (1.012)	97%	77%	<b>0.025 (10.792)</b>	96%	72%	<b>0.039 (8.782)</b>
Past 6-month of any methamphetamine use (%)	85%	78%	0.461 (1.571)	61%	68%	0.463 (0.730)	75%	75%	1.000 (1.000)
Past 6-month OAT (%)	50%	34%	0.159 (1.920)	-	-	0.333 (3.333)	50%	54%	0.736 (0.854)

Note. - Values suppressed due to small cell size ( $n \leq 5$  but not 0). / Analysis not undertaken due to low numbers. Any paid employment includes full-time, part-time and casual work. Anxiety and panic are self-reported mental health problems in the past 6 months. Median K10 score uses the Kessler psychological distress scale, higher K10 score indicates higher psychological distress (>21 indicates high). Past 12-month drug overdose includes all drugs. Past month criminal activity includes dealing, property crime, fraud and violent crime. Distributive or receptive sharing of needles includes new and used needles. Sharing other injecting equipment includes spoons, tourniquet, water, and filters. Online purchasing includes purchases on the surface web and darknet. Past 6-month OAT (opioid agonist therapy) includes methadone, buprenorphine, buprenorphine-naloxone, buprenorphine depot injections. IQR=interquartile range. OR=odds ratio.

## Discussion

This study found that, from 2007-2021, past six-month use of both prescribed and non-prescribed benzodiazepines declined amongst our sample of people who inject drugs in Canberra. However, despite this overall downward trend, there was a small spike in use during the first wave of the COVID-19 pandemic (2020), which had declined again by the following year (2021), returning to levels of use observed prior to COVID-19. In contrast, the frequency of non-prescribed benzodiazepine use remained relatively low and stable throughout the COVID-19 pandemic, with most people reporting less than monthly use.

Overall, the profile of people using non-prescribed benzodiazepines remained fairly stable across 2019-2021. No factors were found to be significantly associated with non-prescribed benzodiazepine use in 2019 ('pre-COVID'), however, in 2020 and 2021 we found that those using non-prescribed benzodiazepines were more likely to have also used heroin, and in 2021, to have engaged in past month criminal activity.

The association between past six-month use of non-prescribed benzodiazepines and heroin, and benzodiazepine use and criminal activity, is consistent with existing literature (11, 12). However, it is possible that the association between heroin and non-prescribed benzodiazepine use in 2020 and 2021 (but not in 2019) is a reflection of disruptions to the heroin market. That is, in 2020, there were decreases in the perceived purity and availability of heroin in Canberra (15), which may have resulted in people turning to other substances, such as benzodiazepines. This, however, is largely speculative and should be interpreted with caution.

A caveat of this study is the relatively small number of people reporting non-prescribed benzodiazepine use, which may have impacted our ability to detect significant differences. It is also important to note that very few participants reported use of 'new' drugs that mimic the effects of benzodiazepines (15), so these participants were excluded from analyses and data not reported. Further, while benzodiazepine use does not appear to have increased markedly through the COVID-19 pandemic, there is increasing concern regarding the circulation of counterfeit products that are sold as benzodiazepines in the Australian illicit drug market (16) which can pose serious health risks (17), and this is a topic that warrants further investigation.

## Suggested citation

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