



Correlates of gamma-hydroxybutyrate use among a sample of people who regularly inject illicit drugs in Australia, 2023

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Key Findings

Australia IDRS



Past six month GHB use **increased** between 2020 (10%) and 2023 (17%).



In 2023, GHB use was most frequently reported by participants from **New South Wales** (24%).



GHB use was not associated with markers of marginalisation, instead more frequently reported by those with **higher levels of schooling**.



However, GHB use was associated with **increased odds** of past year **overdose**.

Introduction



Gamma-hydroxybutyrate (GHB) is a central nervous system depressant that is often used in festival and nightclub settings, and in the context of chemsex¹. It is generally sold in liquid or capsule forms and referred to as 'G', and 'liquid ecstasy', amongst other names. GHB precursors and associated drugs such as 1,4-butanediol are also often sold or marketed as GHB. GHB dependence and withdrawal have been documented in the literature², and harms related to GHB use such as overdoses attended by ambulance have been documented and shown to be increasing over the past two decades³⁻⁵. The most recent data available from Turning Point's AODstats system shows GHB related ambulance attendances peaked at 2979 for the 2022/23 financial year, a substantial increase from 1850 in the previous financial year, and 850 in 2018/19. While many of these attendances would not involve overdose⁶, these trends are nonetheless of concern.

The use of GHB by participants in the Illicit Drug Reporting System (IDRS) has been captured since 2020, with an increase in past six month use noted between 2022 (7%) and 2023 (17%), although few participants reported injection of the drug. This increase in GHB use aligns with personal communications with relevant service providers in Victoria, including those working at needle and syringe programs.

In this bulletin, we aim to examine the correlates of GHB use across Australian capital cities to identify key characteristics of people who report GHB use that may help target those at risk of adverse outcomes.

Methods

Data were collected as part of the Illicit Drug Reporting System (IDRS). Annual interviews were conducted with people aged 18 or older residing in capital city areas of Australia who injected illicit or non-prescribed drugs on a monthly or more frequent basis.

The data for analysis were drawn from the 820 participants recruited for the national IDRS study in 2023. Participants are recruited from capital cities in each state and territory, with a target of 150 participants in Melbourne and Sydney, and 100 in the remaining cities. These interviews were conducted predominately via face-to-face surveys as well as telephone surveys in some instances after the onset of the COVID-19 pandemic. Please refer to the [IDRS Background and Methods](#) document for further details.

GHB use is captured through a series of questions related to drug use in the six months prior to interview. These include any use of GHB, injection of GHB and use of GHB in specific circumstances such as [co-use with methamphetamine](#). Given the low prevalence of injection of GHB we focus on the use of the drug through any route of administration. Potential demographic, drug use, and health and wellbeing correlates of GHB use were drawn from existing literature and examined in a multivariable logistic regression model with the significance level set at $p < 0.05$. A complete case approach was taken such that only cases with complete data on all exposures and outcomes were included, excluding 4% (33/820) of participants. Sensitivity analysis showed no differences in the patterns of association observed in multivariable analyses using only complete cases or all available cases for each exposure variable.

For information regarding the characteristics of the national IDRS sample in 2023, please refer to the [National 2023 IDRS report](#).

Results

Past six month GHB use and correlates associated with use

In 2023, 17% of the sample reported recent use of GHB/GBL/1,4-BD, a significant increase relative to 2022 (7%; $p < 0.001$) and higher than reported in 2021 and 2020 (10% respectively). However, frequency of use remained low, at a median of four days in the preceding six months (IQR=2-20; $n=43$), consistent with 2022 (median 3 days; IQR=2-7; $p=0.344$). Of those who reported recent use ($n=143$), 4% reported injecting as a route of administration ($n \leq 5$ in 2022).

Table 1 shows the multivariable relationships of selected variables with reported GHB use. Younger participants, those with a higher level of high school education, and those reporting a past year overdose were more likely to report GHB use. In contrast, participants reporting current opioid agonist therapy or nominating heroin as their preferred drug were less likely to report GHB use. The prevalence of reported GHB use was highest in Sydney, statistically significantly so in comparison to Hobart, Darwin and Canberra. Although there was some variation in reported GHB use across the remaining variables in Table 1, these were not statistically significant.

Table 1: Relationships of selected variables with past six month GHB use, nationally, 2023

	Past six month GHB use		Adjusted odds ratio (95% CI)	P
	No (n=650) %	Yes (n=137) %		
Mean age (years)	46	43	0.97 (0.95-0.99)	0.002
Gender^a				
Female	85	15	1	
Male	81	19	1.52 (0.98-2.36)	0.060
Capital city				
Sydney	77	24	1	
Melbourne	79	21	0.89 (0.49-1.65)	0.726
Brisbane/Gold Coast	82	18	0.54 (0.27-1.01)	0.085
Perth	83	17	0.65 (0.33-1.29)	0.216
Adelaide	81	19	0.66 (0.33-1.29)	0.223
Hobart	87	13	0.28 (0.11-0.68)	0.005
Darwin	93	7	0.19 (0.05-0.67)	0.010
Canberra	91	9	0.29 (0.13-0.69)	0.005
Highest education				
< Year 10	89	11	1	
≥ Year 10	80	20	2.25 (1.38-3.67)	0.001
Housing stability status^b				
Unstable	77	23	1	

Stable	85	15	0.83 (0.53-1.29)	0.405
Injecting frequency				
<=weekly	87	13	1	
Weekly or more frequent	82	18	1.59 (0.90-2.84)	0.108
Drug of choice				
Other	80	20	1	
Heroin	87	13	0.62 (0.38-0.98)	0.043
Current OAT^c				
No	79	21	1	
Yes	89	11	0.53 (0.32-0.87)	0.013
Past year overdose				
No	85	15	1	
Yes	70	30	2.44 (1.54-3.87)	<0.001
Past month needle sharing				
No	83	17	1	
Yes	75	25	1.41 (0.76-2.61)	0.274

Note. ^a sex assigned at birth. ^bunstable accommodation includes includes people without accommodation (rough sleeping or squatting, including sleeping in car), people living in temporary or crisis accommodation (shelter/refuge, drug treatment residence), and people living in inadequate or insecure accommodation (boarding house/hostel, couch surfing, including at home of friends or family). ^copioid agonist therapy.

Discussion



Self-reported use of GHB was reported by 17% of the IDRS sample in 2023, a significant increase from 2022 (7%). Our findings show that reported use was highest in Sydney and more frequently reported by participants whose characteristics would typically be regarded as less marginalised (i.e., those with higher levels of schooling). Participants on OAT or nominating a drug other than heroin (primarily methamphetamine) as their preferred drug of choice, were more likely to report GHB use. This is consistent with previous work showing relatively high co-use of methamphetamine and GHB⁷⁻⁸. Importantly, however, overdose was associated with GHB use. Our findings suggest that targeting young people who inject drugs and who are not receiving OAT may be important in reducing the potential harms associated with GHB use.

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