

GHB use and associated demographic and drug-related behavioural characteristics amongst sentinel samples of people who regularly use and inject illicit drugs in Australia, 2021

Antonia Karlsson¹, Julia Uporova¹, Olivia Price¹, Daisy Gibbs¹, Udesha Chandrasena¹, Rosie Swanton¹, Paul Dietze², Raimondo Bruno^{1,3}, Simon Lenton⁴, Caroline Salom⁵, Louisa Degenhardt¹, Michael Farrell¹, Amy Peacock¹ and Rachel Sutherland¹

The Difference is Research

¹ National Drug and Alcohol Research Centre, UNSW Sydney

² Burnet Institute, Melbourne, Australia

³ University of Tasmania, Hobart, Australia

⁴ National Drug Research Institute, Curtin University, Perth, Australia

⁵ Institute for Social Science Research, The University of Queensland, Brisbane, Australia

Introduction

- ❖ There is significant concern regarding the increase in use of GHB and associated harms in Australia (1).
- ❖ A depressant drug that has a sedative-hypnotic effect (2), GHB has gained popularity in recent years, and is commonly used within nightlife settings (3).
- ❖ Whilst GHB is known to produce feelings of euphoria, relaxation and sociability at small doses (4), it can cause sedation and memory impairment at high doses, and acute toxicity may manifest as agitation, excitation and respiratory depression (1).
- ❖ Risk can be exacerbated by use of other drugs, such as methamphetamine, leading to immense strain in the body and a risk of experiencing seizures (5).
- ❖ Additionally, GHB coupled with alcohol greatly increases the chance of overdose, with only a narrow safety margin between a recreational dose and a fatal dose (6).

Aims

The aims of this research are to examine:

- past six-month (recent) use of GHB; and
- the demographic and drug-related behavioural characteristics of those who reported recent GHB use, among two sentinel samples of people who regularly use and inject illicit drugs in Australia, with a specific focus on data collected in 2021.

Methodology

- ❖ Data were obtained from the Ecstasy and Related Drugs Reporting System (EDRS; 2003-2021) and the Illicit Drug Reporting System (IDRS; 2000-2021).
- ❖ The EDRS is an annual survey of people who regularly consume illicit stimulants (primarily ecstasy) recruited from capital cities, whilst the IDRS consists of an annual survey of people who regularly inject drugs.
- ❖ Questions regarding past six month (i.e., 'recent') GHB use have been present in the EDRS interviews since 2003. Questions specifically around GHB use were first included in the 2020 IDRS interview, and subsequently in 2021.
- ❖ Chi square analyses were undertaken to determine statistical significance between demographic, drug use and behavioural characteristics.

Results

- ❖ Historically, the percentage of participants reporting recent use of GHB among the national EDRS sample has remained low and steady, with 9% reporting recent use in 2021, a significant increase from 6% in 2020 ($p=0.049$). Use was infrequent in 2021, with recent consumers reporting a median of two days (IQR=1-6) of use in the past six months.
- ❖ Ten per cent of the IDRS sample reported recent use of GHB in 2021 (10% in 2020; $p=0.964$) on a median of six days (IQR=2-15), indicating monthly use.
- ❖ Of EDRS participants who reported recent use and responded ($n=53$), the median quantity of GHB used in a 'typical' session was 3.00ml (IQR=2.00-6.00).
- ❖ Of IDRS participants who reported recent use and responded ($n=82$), the median quantity of GHB used in a 'typical' session was 3.00ml (IQR=2.00-6.38).

References

- (1) Degenhardt, L., Darke, S., & Dillon, P. (2002). GHB use among Australians: characteristics, use patterns and associated harm. *Drug and Alcohol Dependence*, (67) 1; pp 89-94.
- (2) Manning, V., Arunogiri, S., Frei, M., Ridley, K., Mroz, K., Campbell, S. & Lubman, D. (2018). Alcohol and other drug withdrawal: Practice guidelines. 3rd edn. Richmond, Vic: Turning Point.
- (3) Hillebrand, J., Olszewski, D., Sedefov, R., (2008). GHB and its precursor GBL: An emerging trend case study. Lisbon: EMCDDA.
- (4) Wood, DM., Warren-Gash, C., Ashraf, T., Greene, SI., Shather, Z., Trivedy, C., Clarke, S., Ramsey, J., Holt, DW., & Dargan, PI. (2008). Medical and legal confusion surrounding gamma-hydroxybutyrate (GHB) and its precursors gamma-butyrolactone (GBL) and 1,4-butanediol (1,4BD). *QJM: Monthly Journal of the Association of Physicians*, 101(1), 23-29.
- (5) Darke, S., Peacock, A., Dufou, J., Farrell, M., & Lappin, J. (2020). Characteristics and circumstances of death related to gamma hydroxybutyrate (GHB). *Clinical Toxicology*, 58:11, 1028-1033.
- (6) Mazarr-Proo, S. & Kerrigan, S. (2005). Distribution of GHB in Tissues and Fluids Following a Fatal Overdose. *Journal of Analytical Toxicology*, 29. 398-400.

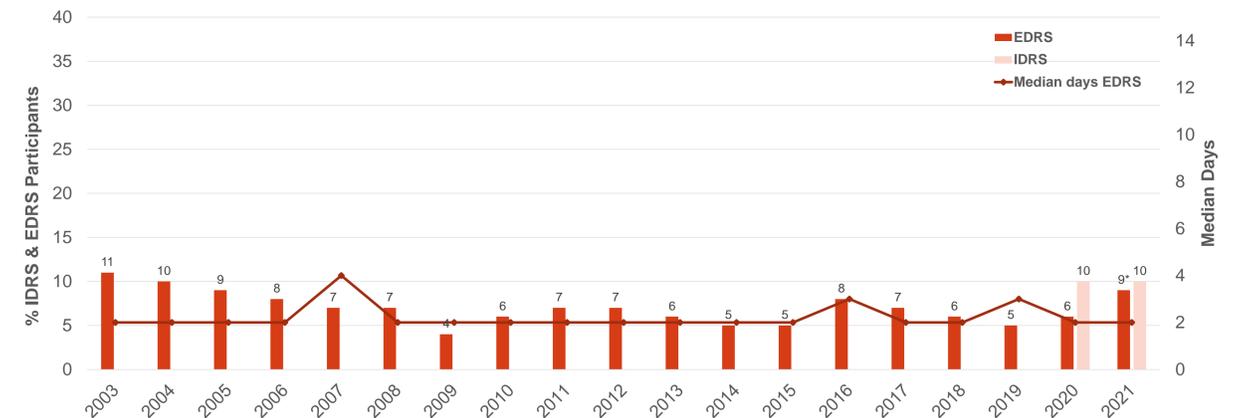
Acknowledgements and more information

The Ecstasy and Related Drugs Reporting System (EDRS) and the Illicit Drug Reporting System (IDRS), falling within the Drug Trends program of work, was supported by funding from the Australian Government under the Drug and Alcohol Program. We would like to thank the participants who were interviewed for both the IDRS and EDRS in the present and in previous years.

For more information, please email a.karlsson@unsw.edu.au

Results continued.

Figure 1. Recent (past 6 months) use of GHB amongst the IDRS and EDRS samples, nationally, 2003-2021



Note. Participants in the IDRS were first asked about GHB in 2020. Median days for GHB in IDRS first collected in 2021, therefore, data not presented. Y axis reduced to 40% and 14 days to improve visibility of trends. * $p<0.050$; ** $p<0.010$; *** $p<0.001$.

Table 1: Demographic, drug use and other behavioural characteristics of IDRS participants who had recently consumed GHB, nationally, 2021

Demographic, drug use and other behavioural characteristics	Recent use of GHB (n=93)	No recent use of GHB (n=795)	p-value
% Male	68	65	0.587
% Heterosexual	65	84	0.001
% Unemployed	87	88	0.761
Median age (IQR)	39 (IQR=34-45)	45 (IQR=38-52)	0.001
% Methamphetamine as drug injected most often last month	73	51	0.001
% Weekly use of any methamphetamine in past six months	87	72	0.002
% Any past 12 month drug overdose	35	15	0.001
% Current drug treatment	27	38	0.034

Table 2: Demographic, drug use and other behavioural characteristics of EDRS participants who had recently consumed GHB, nationally, 2021

Demographic, drug use and other behavioural characteristics	Recent use of GHB (n=68)	No recent use of GHB (n=704)	p-value
% Male	57	64	0.283
% Heterosexual	59	75	0.005
% Unemployed	38	20	0.001
Median age (IQR)	29 (IQR=24-32)	24 (IQR=21-28)	0.001
% Methamphetamine as drug used most often last month	19	3	0.001
% Weekly use of any methamphetamine in past six months	48	21	0.001
% Any past 12 month drug overdose	37	32	0.362
% Current drug treatment	9	3	0.012

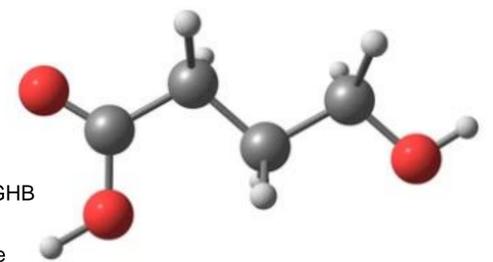
Across both samples, participants who reported GHB use were:

- Less likely to be heterosexual;
- More likely to report methamphetamine as the drug injected most often in the past month; and
- More likely to report weekly or more use of methamphetamine.

Age and current drug treatment were also consistently associated with recent GHB use, however, the direction of this relationship changed across samples.

Significantly more IDRS participants reported any past 12-month drug overdose among those who had recently used GHB, with 12% reporting they had overdosed following use of the drug in the past year.

Over one-third of EDRS participants who had recently used GHB reported any past 12-month drug overdose; similar to IDRS, 12% reported they had overdosed following use of the drug in the past year.



Conclusion

- ❖ Corresponding with previous research, our findings suggest that people who use GHB are more likely to use methamphetamine and at a higher frequency, than those who report no recent use of GHB;
- ❖ This is of concern given that methamphetamine has been found to be commonly present in non-fatal and fatal GHB overdoses in Australia (5);
- ❖ Most IDRS participants are recruited through Needle and Syringe Programs, suggesting that harm reduction messaging regarding the risk of GHB overdose through these sites could be beneficial;
- ❖ Previous research (5) has highlighted the need for people to be trained in recognising signs of GHB overdose and in adopting harm reduction strategies when using GHB, particularly when using GHB with other stimulants, such as methamphetamine;
- ❖ Although our findings suggest that those who reported recent GHB use were less likely to currently be in treatment, this is potentially related to the higher rates of methamphetamine use, rather than opioid agonist treatment.