# ALPRAZOLAM MISUSE AMONG YOUNG PEOPLE IN THE UNITED KINGDOM

Joanna Hockenhull<sup>1</sup>, Elise Amioka<sup>2</sup>, Joshua C. Black<sup>2</sup>, Colleen M. Haynes<sup>2</sup>, David M. Wood<sup>1</sup>, Richard C. Dart<sup>2</sup>, Paul I. Dargan<sup>1</sup>

<sup>1</sup>Clinical Toxicology, Guy's and St Thomas' NHS Foundation Trust- London, UK <sup>2</sup>Rocky Mountain Poison & Drug Center - Denver Health, CO

#### Introduction

- There is growing concern in the United Kingdom (UK) about non-medical use (NMU) of alprazolam (Xanax®) among young people following numerous media reports of hospitalisations and addiction.<sup>1,2</sup>
- Alprazolam is only available in the UK via private prescription.
- It is believed that its use has been glamorised by celebrities and through social media.<sup>3</sup>
- A UK Parliament in January 2018 debate noted there is limited research available on UK misuse of alprazolam.<sup>4</sup>
- We investigated the epidemiology of alprazolam NMU compared with diazepam though data collected via the RADARS® System UK Survey of Non-Medical Use of Prescription Drugs (NMURx) Program.

## Methods

The NMURx Program is a large-scale, repeated, cross-sectional survey of adults in multiple countries, including the UK.<sup>5</sup>

- NMURx collects data on respondent demographics and the prevalence, reasons, routes of administration, and method of drug acquisition for NMU of prescription drugs.
- NMU was defined as "medication use without a doctor's prescription or for any reason other than what was recommended by your doctor" (e.g. "for enjoyment/to get high", "to self-treat pain").
- Recent NMU was classified as NMU of a product within the last 90 days.
- Post-stratification weights were applied to reflect the distribution of adults in the UK, based on age, gender, and geographic region.
- Data was collected 28<sup>th</sup> September 1<sup>st</sup> December 2017.
- The prevalence and 95% confidence intervals (CI) of lifetime NMU, recent NMU and reason for NMU of alprazolam and diazepam among all adults in the UK were estimated.
- The prevalence of recent NMU from data collected in the 2016 Survey (12<sup>th</sup> August 2016 1<sup>st</sup> September 2016) was analysed for comparison.

Table 1: Nationally Estimated Demographics			
Characteristic	% (95%CI) Weighted N=52,927,659		
Gender			
Male	48.7 (47.6-49.7)		
Female	51.3 (50.3-52.4)		
Age (years)			
16-24	13.6 (12.7-14.6)		
25-34	16.8 (16.0-17.6)		
35-44	15.8 (15.1-16.5)		
45-54	17.4 (16.7-18.2)		
55-64	14.2 (13.6-14.8)		
65+	22.2 (21.3-23.0)		

Table 2: Prevalence of Recent NMU by Age			
	Recent NMU % (95%CI)	p-value	
Alprazolam			
All ages	0.08 (0.01-0.15)	N/A	
16-24yrs	0.37 (0.01-0.81)		
25-34yrs	0.14 (0.01-0.34)	< 0.001	
35+yrs	0.01 (0.01-0.03)		
Diazepam			
All ages	0.21 (0.12-0.31)	N/A	
16-24yrs	0.17 (0.01-0.41)		
25-34yrs	0.39 (0.07-0.72)	0.262	
35+yrs	0.18 (0.08-0.27)		

Table 3: Prevalence of Reason for Lifetime NMU			
Reason	Alprazolam % (95%CI)	Diazepam % (95%CI)	
To treat a medical condition	0.18 (0.07-0.28)	0.93 (0.73-1.13)	
To get high	0.13 (0.05-0.21)	0.44 (0.29-0.59)	
To come down	0.09 (0.02-0.16)	0.27 (0.16-0.39)	
To prevent withdrawal	0.04 (0.00-0.07)	0.11 (0.05-0.17)	
Other	0.02 (0.00-0.04)	0.09 (0.03-0.14)	

# Results

- The estimated national prevalence of lifetime NMU of alprazolam was 0.32% (95% CI: 0.19-0.46), and 1.3% (95% CI: 1.1-1.5) for diazepam.
- As shown in **Table 2**, the prevalence of recent NMU was significantly different when split by age category for alprazolam (p<0.001), but not for diazepam (p=0.262).
- As shown in **Table 3**, the most common reason for lifetime NMU for both drugs was to treat a medical condition (alprazolam: 0.18%; diazepam: 0.93%). The second most common reason for lifetime NMU was to get high (alprazolam: 0.13%; diazepam: 0.44%).
- The prevalence estimates in recent NMU reported from the 2016 survey compared to the 2017 survey were not significantly different for either drug (alprazolam: p=0.416; diazepam: p=0.190).

#### Conclusions

- The national prevalence of NMU of alprazolam is lower than diazepam, likely linked to the lower availability.
- However, prevalence of NMU of alprazolam is higher among younger age categories than older categories; a similar difference was not observed for diazepam.
- The most common reasons for use were the same between the two drugs, but the relative prevalence of the reasons between drugs differed.
- The national prevalence estimate of NMU to treat a medical condition was similar to the estimate of NMU to get high for alprazolam. However, for diazepam, the prevalence of NMU to treat a medical condition was twice the prevalence of NMU to get high.
- Further research is needed to fully understand the motivations of alprazolam NMU and to monitor whether the popularity of alprazolam will rise.

## Limitations

Like any Internet survey, the study is limited by certain design features of NMURx and the possibility of observation, selection, response and memory recall biases. Additionally, the minimum age of individuals allowed to participate in panel surveys in the UK is 16 years potentially underestimating the use of alprazolam among young people.

#### References:

- 1. Gulland A. Sixty seconds on... Xanax. BMJ: British Medical Journal (Online). 2018 Feb 12;360.
- 2. Marsh, S. (9 February 2018) 'It reduces people to zombies': UK readers on Xanax misuse. The Guardian. https://www.theguardian.com/society/2018/feb/09/reduces-people-zombies-uk-readers-xanax-misuse
- 3. Brown, A. (13 March 2018) Music by rap legends Eminem and Lil Wayne to blame for teens' Xanax binges. Daily Star. https://www.dailystar.co.uk/news/latest-news/688649/Eminem-Lil-Wayne-Xanax-drug-addiction-UK-teens
- 4. UKPOL (16 January 2018) "Bambos Charalambous 2018 Speech on the Misuse of Xanax." http://www.ukpol.co.uk/bambos-charalambous-2018-speech-on-the-misuse-of-xanax
- 5. Wood DM, Green JL, Haynes CM, Rockhill KM, Dargan PI. Comparison of prevalence of illicit recreational drug use in the annual Crime Survey England and Wales and the UK Survey of Non-Medical Use of Prescription Drugs Programme between 2014 and 2016. *Clin Toxicol* 2017; **55 (5)**: 445–446









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