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# Online Survey of Prescription Medicine Misuse: What is the evidence for misuse of benzodiazepines and 'Z drugs' in Singapore?

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# How Common Is Prescription Medicine Misuse?

**Australian Prescriber**

VOLUME 37 : NUMBER 3 : JUNE 2014

ARTICLE

## Pharmaceutical drug misuse in Australia

### SUMMARY

The pattern of substance misuse changes over time as the types and availability of illicit and pharmaceutical drugs change.

The number of psychoactive drugs and formulations available in Australia has increased substantially in recent years. Increasing exposure puts individuals at risk of dependence and may escalate use and harm, especially for the more vulnerable such as those with a history of mental health problems or substance abuse disorder.

A new, hidden population dependent on prescribed or over-the-counter medicines is emerging.

The National Pharmaceutical Drug Misuse: Framework for Action has been developed and includes a system to coordinate the safe supply of pharmaceutical drugs subject to misuse.

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Department of Forensic Medicine  
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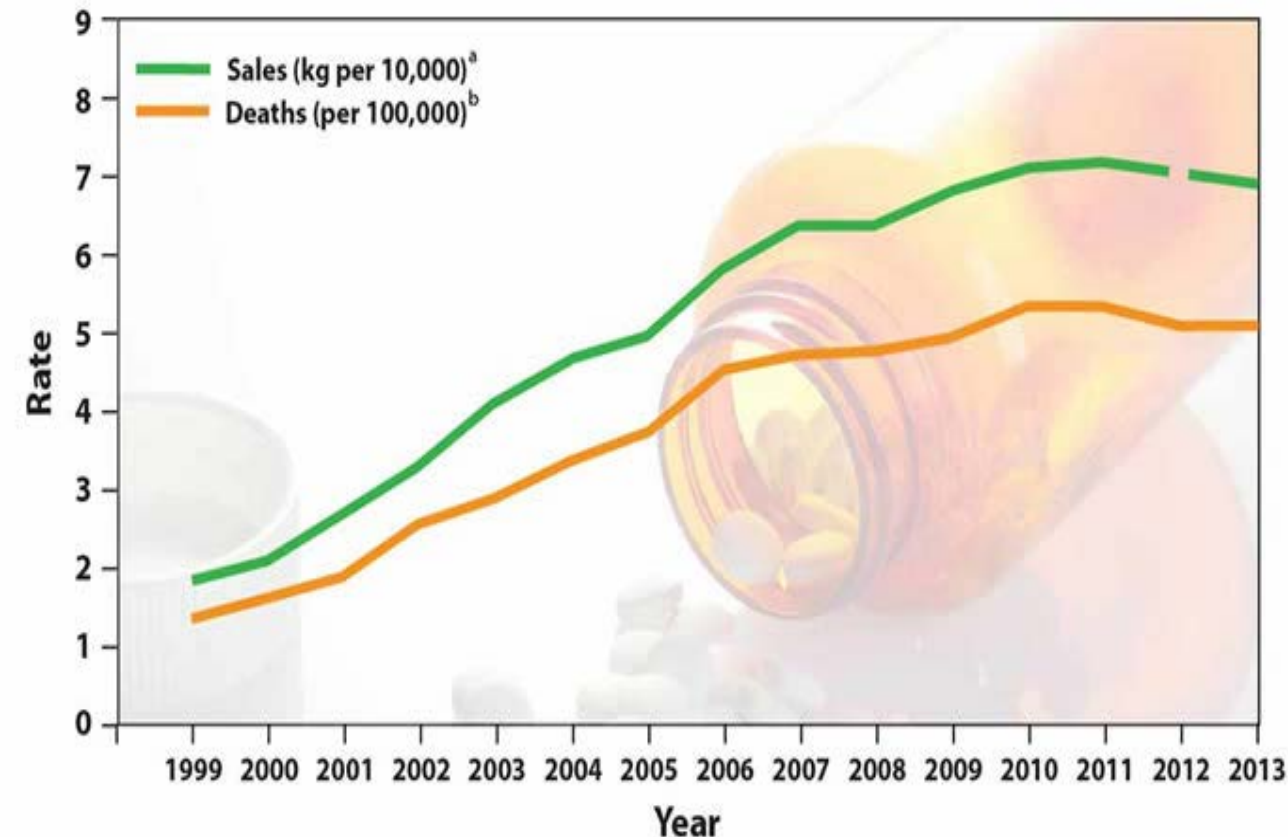
### Key words

benzodiazepines, codeine, drug-seeking behaviour, opioids, oxycodone, pain

*Aust Prescr 2014;37:79-81*

# How Common Is Prescription Medicine Misuse?

**Prescription Painkiller Sales and Deaths**



Sources:

<sup>a</sup>Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration (DEA), 2012 data not available.

<sup>b</sup>Centers for Disease Control and Prevention. National Vital Statistics System mortality data. (2015) Available from URL:

<http://www.cdc.gov/nchs/deaths.htm>.

*The NEW ENGLAND JOURNAL of MEDICINE*

**SPECIAL ARTICLE**

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Richard C. Dart, M.D., Ph.D., Hilary L. Surratt, Ph.D., Theodore J. Cicero, Ph.D.,  
Mark W. Parrino, M.P.A., S. Geoff Severtson, Ph.D., Becki Bucher-Bartelson, Ph.D.,  
and Jody L. Green, Ph.D.

N Engl J Med 2015;372:241-8.

DOI: 10.1056/NEJMsa1406143

# How Common Is Prescription Medicine Misuse?



Home Office



## **Drug Misuse: Findings from the 2014/15 Crime Survey for England and Wales** Second edition

### **1.5 LAST YEAR USE OF PRESCRIPTION-ONLY PAINKILLERS**

The 2014/15 CSEW included a question for the first time on the misuse of prescription-only painkillers<sup>3</sup>. The survey revealed that in the last year 5.4 per cent of adults aged 16 to 59 had misused a prescription-only painkiller not prescribed to them. Breaking this down by age group, 7.2 per cent of 16 to 24 year olds had misused a prescription-only painkiller in the last year, while 4.9 per cent of 25 to 59 year olds had done so. The difference between the two age groups was statistically significant (figures not shown in tables).

# How common is Prescription Medicine Misuse in Singapore?





# Evidence of Prescription Medicine Misuse In Singapore?



## Students fake ADHD symptoms to get 'brain booster' drug

PUBLISHED OCT 21, 2013, 7:50 AM SGT



Ritalin, often prescribed to ADHD sufferers, helps in concentration



Some secondary school students abuse mental stimulants to prepare for exams, claiming they use them as 'last resort'  
PHOTO ILLUSTRATIONS: ARIFFIN JAMAR

## TEENS RESORT TO ILLEGAL ADHD DRUGS TO STUDY FOR EXAMS

SOME SECONDARY SCHOOL STUDENTS ABUSE MENTAL STIMULANTS TO PREPARE FOR EXAMS, CLAIMING THEY USE THEM AS 'LAST RESORT'

1391

May 3, 2015 6:00am





# Our Study

- Benzodiazepines and the 'Z-drugs' are commonly prescribed for anxiety and sleep disorders
- The objective of this study was to establish, in Singapore:
  1. Awareness of these drugs  
and
  2. Prevalence of their misuse  
*('Misuse' = use without a doctor's prescription or for any reason other than what was recommended by your doctor)*

# Methods

- Online survey delivered through a market research company in Sept 2015
- Survey Data:
  - 1) Demographic data (age, gender, race, employment status)
  - 2) Whether respondents had heard of a range of benzodiazepines and 'Z drugs' and if so, whether they had ever misused them

Drugs included were benzodiazepines and 'Z drugs' available in Singapore

- Benzodiazepines: diazepam, alprazolam, lorazepam, midazolam, clonazepam, nitrazepam, bromazepam
- 'Z-drugs': zopiclone, zolpidem





# Results

## Study Population



- 1000 respondents
- Gender/Age
  - 500 (50.0%) male, 499 (49.9%) female, 1 (0.1%) transgender
  - Median (IQR) age 35 (29-45) years
- Race/ Ethnicity
  - 82.5% Chinese, 8.2% Indian, 5.4% Malay, 0.8% Eurasian, 3.1% 'other'
- Employment Status
  - 85.4% employed, 11.3% unemployed, 3.3% students

# Benzodiazepines

- **434 (43.4%)** of the respondents had heard of at least one benzodiazepines
- Of the 434 that had heard of a benzodiazepine, **38 (8.8%)** reported misuse of at least one benzodiazepine

Demographics of the 38 benzodiazepine misusers		
Gender, N (%)		
	Male	22 (57.9)
	Female	16 (42.1)
Race, N (%)		
	Chinese	31 (81.6)
	Malay	1 (2.6)
	Indian	5 (13.2)
	Eurasian	1 (2.6)
	Other	0 (0.0)
Employment, N (%)		
	Employed	32 (84.2)
	Unemployed	5 (13.2)
	Studying	1 (2.6)
Age, Median (IQR)		36.0 (32.0, 42.0)

# Benzodiazepines

Drug Name	Number (%) who had heard of the drug	Number (%) of those who had heard of the drug that had ever misused it
Diazepam	349 (34.9%)	27 (7.7%)
Alprazolam	183 (18.3%)	9 (4.9%)
Lorazepam	151 (15.1%)	10 (6.6%)
Midazolam	146 (14.6%)	8 (5.5%)
Clonazepam	88 (8.8%)	4 (4.5%)
Nitrazepam	78 (7.8%)	7 (9.0%)
Bromazepam	75 (7.5%)	5 (6.7%)

# Z-Drugs

- **113 (11.3%)** of the respondents had heard of any of the surveyed 'Z-drugs' (zolpidem, zopiclone)
- Of the 113 that had heard of a 'Z-drug', **11 (9.7%)** reported misuse of at least one 'Z-drug'

Demographics of the 11 Z-drugs misusers	
Gender, N (%)	
Male	6 (54.6)
Female	5 (45.5)
Race, N (%)	
Chinese	10 (90.9)
Malay	0 (0.0)
Indian	1 (9.1)
Eurasian	0 (0.0)
Other	0 (0.0)
Employment, N (%)	
Employed	11 (100.0)
Unemployed	0 (0.0)
Studying	0 (0.0)
Age, Median (IQR)	
33.0 (26.0, 39.0)	

# Z-Drugs

Drug Name	Number (%) who had heard of the drug	Number (%) of those who had heard of the drug that had ever misused it
Zolpidem	86 (8.6%)	7 (8.1%)
Zopiclone	67 (6.7%)	4 (6.0%)



# Conclusions

- This pilot study suggests that the prevalence of benzodiazepine and Z-drug misuse in Singapore is similar to that reported in studies from the United Kingdom<sup>1</sup> and United States<sup>2</sup>

*1. Kapil V et al. Misuse of benzodiazepines and Z-drugs in the UK. British Journal of Psychiatry. 2014; 205(5): 407-8*

*2. Goodwin RD, Hasin DS. Sedative Use and Misuse in the United States. Addiction 2002; 97(5):555-62*

- Further work is needed to:
  - understand the reasons for this misuse
  - explore other factors including the source of the drugs and the implications of the misuse
  - inform the design of appropriate public health initiatives

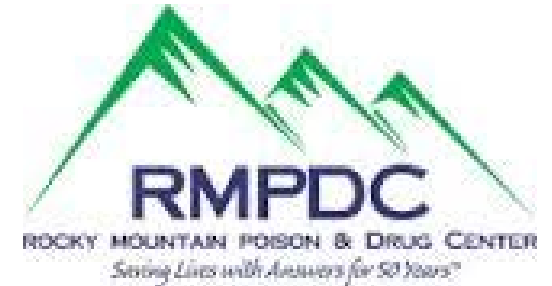
# Acknowledgements

## Co-Authors

Prof Paul Dargan, Dr David Wood



Ms Andrea Besharat, Ms Heather McDaniel, Dr Jody Green



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# Thank you



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