

# Methamphetamine use in acute psychiatric inpatients: prevalence and clinical correlates

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## Abstract

To examine the prevalence and correlates of methamphetamine use in psychiatric inpatients, we conducted a retrospective study of all admissions (N = 635) to two public adult acute psychiatric inpatient units over 12 months. Data extracted from discharge summaries included age, sex, methamphetamine and other substance use (cannabis, alcohol, other illicit drugs), Inpatient Treatment Order (ITO) status, diagnosis and length of stay (LOS).

Methamphetamine use was recorded in 38.9% of admissions (n = 247) and was more common in men (44.3%) than women (32.5%) (p = 0.005). Age, diagnosis, ITO status and LOS were not associated with methamphetamine use. Methamphetamine users were significantly more likely to use other substances.

Conclusions: Methamphetamine use was common and occurred across diagnostic groups, highlighting its importance in acute psychiatric care and its strong association with polysubstance use.

## Background

Methamphetamine use has become an increasing concern for mental health services in Australia. Psychostimulants such as methamphetamine can precipitate acute psychotic symptoms and exacerbate existing psychiatric disorders, frequently leading to emergency presentations and psychiatric hospitalisation (Lappin 2019).

Methamphetamine may cause an acute intoxication, which resolves within a few days, or a more prolonged drug-induced psychotic episode that can last for days to weeks. Methamphetamine use also appears to precipitate schizophrenia in vulnerable individuals.

A Norwegian registry study (Rognli 2023) found that 25% of patients with methamphetamine-induced psychosis later developed schizophrenia, and a further 3.8% developed bipolar disorder. Sara et al. (2014) evaluated New South Wales (NSW) hospital, community mental health and emergency department data and found that stimulant use disorders occur in people with schizophrenia and first-episode psychosis at rates more than 10 times higher than in the general population. In addition, a Danish study (Peterson 2019) found that a diagnosis of schizophrenia is associated with an increased risk of subsequent substance use, including methamphetamine use.

Research into the association between methamphetamine use and mental illness is further confounded by frequent comorbidity with other substance use disorders – especially cannabis, which is known to increase the risk of developing schizophrenia (di Fiorti) and exacerbating anxiety and depression (Gripe 2024).

In Australia, the National Drug Strategy Household Survey 2022–2023 reported that approximately 1% of the population had used methamphetamine or amphetamines in the previous 12 months, while 2.1% reported non-medical use of pharmaceutical stimulants such as dexamfetamine and methylphenidate.

A systematic review by Marel et al (2025) found that 7-53% of people accessing mental health treatment in Australia had problematic use of alcohol and other drugs. Of this group, about 20% had used stimulants in the past year, and this proportion rose to 42% for inpatients. The prevalence was higher in men, and in younger people. In this review, the most recent study concerning stimulants was more than a decade old (Ogloff 2015), highlighting the need for updated data. Therefore, the current study was undertaken to investigate the prevalence of methamphetamine use among patients admitted to an acute psychiatric inpatient unit and to examine demographic and clinical factors associated with methamphetamine use.

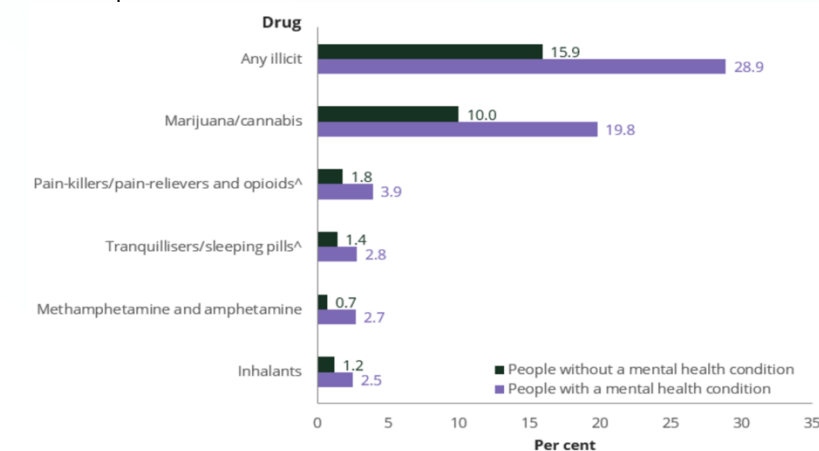


Figure 1: Rates of drug use in mental health and general population (National Drug Strategy Household Survey 2022-2023)

## Methodology

This retrospective cohort study included all patients admitted (N = 635) to two adult (18-64 years) acute psychiatric inpatient units over a 12-month period from January to December 2024. These units, located in a socially disadvantaged urban region, cover a catchment population of more than 400,000 and have a total of 48 beds. Readmissions (N=140) were not included.

Discharge summaries were analysed using computational text processing with manual verification. A Python 3 script was developed to identify references to substances by searching anonymised discharge summaries for predefined keywords and phrases (e.g. “meth”, “methamphetamine”, “cannabis”). Additional rules were implemented to exclude negated phrases (e.g. “no meth use” or “denies methamphetamine use”). A subset of discharge summaries was manually reviewed to validate the accuracy of the automated extraction, and the search rules were refined until automated and manual classification were concordant. Artificial intelligence was not used in these analyses. The python script can be obtained by emailing the authors.

Data extracted from electronic medical records via the Python 3 script included age, sex, involuntary treatment status, length of stay, and documented history of substance use. Substances were grouped into prescribed and illicit amphetamines; cannabis; other illicit drugs (e.g. ecstasy, cocaine); and alcohol. Diagnoses were grouped into five categories –schizophrenia spectrum disorders, affective disorders, unspecified psychosis, drug- or alcohol-related disorders, and miscellaneous. It was not possible to differentiate between prescribed medicinal cannabis and illicit cannabis, or between low-risk levels of alcohol use and alcohol abuse. Although associations between prescribed amphetamines and other measures were of interest, the small number of cases (N = 34) precluded statistical analyses. Analyses were conducted using Microsoft Excel for Microsoft 365 (Version 2602). Chi square tests were used for categorical variables, independent t-tests for continuous variables, and logistic regression to examine associations between age, gender and methamphetamine use.

Analyses were conducted using Microsoft Excel for Microsoft 365 (Version 2602). Chi-square tests and independent t-tests were performed in Excel. Logistic regression to examine associations between age, sex and methamphetamine use was performed using the Python 3 script, using the statsmodels library.

This project was reviewed and approved by the regional Human Research Ethics Committee as a quality improvement study. As the study involved retrospective analysis of de-identified clinical data collected as part of routine care, the requirement for individual patient consent was waived.

```
search_terms = {
  'meth-Hx': {
    'terms': ['methamphetamine'],
    'regex': r'\b(meth|amphetamine)\b',
    'exclusions': ['dexamphetamine', 'denies', 'nil', 'does not', 'never',
  },
  'THC-Hx': {
    'terms': ['cannabis', 'marijuana'],
    'regex': r'\b(thc)\b',
    'exclusions': ['denies', 'nil', 'does not', 'never', 'denied', 'medical
  },
  'EtOH-Hx': {
    'terms': ['alcohol use disorder', 'etoh use disorder', 'binge drinking',
    'exclusions': ['occasional', 'nil', 'social', 'denies', 'denied', 'never
  },
  'Other-illicit-Hx': {
    'terms': ['cocaine', 'opioid misuse', 'opioid withdrawal', 'heroin', 'm
    'regex': r'\b(ghb|dmt)\b',
    'exclusions': ['denies', 'denied', 'denys', 'never', 'nil', 'does not']
```

Figure 2: Some of the criteria used in the computational text processing. The Python script can be obtained by emailing the authors.

## Results

### Sample Characteristics

The cohort comprised 339 men and 295 women. Mean age at admission was 38.8 years for men and 40.8 years for women (p = 0.030). Mean LOS across the cohort was 22.6 days.

### Prevalence of Methamphetamine Use

Methamphetamine use was documented in 247 patients (38.9%). The prevalence was significantly higher among men (44.3%) than women (32.5%) ( $\chi^2 = 10.45$ , p = 0.005). Logistic regression demonstrated that male gender was significantly associated with methamphetamine use (OR  $\approx$  1.66, p = 0.004). Age was not significantly associated with methamphetamine use (p = 0.406), and there was no significant interaction between age and gender (p = 0.468). There were very few cases (N=34; 5%) where prescribed amphetamines were mentioned in the discharge summaries. Of these, 5 were also using methamphetamine and 11 were using cannabis.

### Indigenous Status and methamphetamine use

There were 55 Indigenous patients admitted and of these, 23 (41.8%) used methamphetamine. There was no significant difference between Indigenous and non-Indigenous patients in the proportion using methamphetamine

### Methamphetamine Use, Involuntary Treatment and Length of Stay

Overall, 57.7% of patients were managed under an ITO. ITO prevalence among patients using methamphetamine was 60.7%, compared with 55.6% for those who were not using methamphetamine. This difference was not statistically significant ( $\chi^2 = 1.43$ , p = 0.232).

ITO status itself was strongly associated with longer LOS (26.5 vs 18.9 days; p < 0.0001), but the use of methamphetamine was not independently associated with longer LOS.

### Diagnoses

Schizophrenia was the most common diagnosis (53.1%) followed by affective disorders (21.9%) and miscellaneous (21.4%). There was no significant difference in the proportion of cases in each diagnostic category, between methamphetamine users and non-users.

## Conclusion

The high prevalence of methamphetamine use among psychiatric inpatients reflects the complex relationship between stimulant use and severe mental illness. Methamphetamine is well recognised to precipitate acute agitation, psychotic symptoms and behavioural disturbance, and can exacerbate existing psychiatric disorders. In clinical practice, presentations may represent acute intoxication, methamphetamine-induced psychosis, or primary mental disorders occurring in the context of stimulant use. These presentations may appear clinically similar during acute admissions, and diagnostic clarity may only emerge over time with longitudinal follow-up.

This study provides contemporary data on the prevalence of methamphetamine use in acute psychiatric inpatient services. The findings highlight the extent to which stimulant use now forms part of the routine clinical workload of inpatient psychiatry and underline the need for mental health systems to adapt to the growing interface between stimulant use and severe mental illness.

