Substance-use disorders and psychological distress among police arrestees

Edward B Heffernan, Joe Finn, John B Saunders and Gerard Byrne

ABSTRACT

Objectives: To determine the 12-month prevalence of substance-use disorders and psychological morbidity in an Australian arrestee population.

Design: Cross-sectional descriptive study.

Participants and setting: 288 police arrestees at the Brisbane City Police Watch House in February and March 2001.

Outcome measures: Prevalence of drug and alcohol disorders; psychological "caseness" according to the 28-item General Health Questionnaire; demographics and index offences.

Results: 86% of the arrestees had at least one substance-use disorder; most had multiple disorders. More than 80% were substance dependent. The predominant substances used were amphetamines, marijuana, opioids and alcohol. 82% of the men and 94% of the women were suffering significant psychological distress.

Conclusions: Development of services for detoxification and treatment of this population is a pressing need. The findings provide crucial information for the planning and implementation of drug courts and court diversion systems.

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SUBSTANCE-USE DISORDERS are a significant cause of death and disability. The association between crime and substance-use disorders is well documented.[1] Community studies have demonstrated substantially increased rates of criminal convictions in people with substance-use disorders,[2-4] and studies of prison populations reveal rates of substance-use disorders many times higher than in the general population.[5-8]

In Australia, government and health facilities are under increasing pressure to deal with this problem. Strategies such as legal injecting rooms, heroin trials and drug courts are frequent issues of public debate. Decisions about strategies need to be based on scientific research, as they involve the allocation of scarce resources. Despite this, there has been limited research on police arrestees.

It has been generally accepted that rates of substance misuse among arrestees are likely to be high. Urine drug testing of arrestees has supported this view — most people arrested for crime have positive tests for illicit substances.[9] Still unknown are the prevalence of different types of substance-use disorders, the extent of dependence relative to abuse, and whether particular subpopulations of arrestees have greater morbidity.

METHODS

Our study was undertaken to gather data on these questions and facilitate the establishment of a drug and alcohol service to a large inner-city Brisbane police station (watch house). This is an 84-bed facility built in 2000. It houses 40–60 male and female arrestees per day. The police and government medical officers had expressed concerns about the difficulties of managing the volume of drug and alcohol problems in this facility.

Participants

We attempted to interview all arrestees held in the watch house for longer than 12 hours, who consented, spoke English and were considered fit to interview, in a 5-week period. The age and sex of the "missed" and non-consenting ("refused") subjects were recorded.

Procedure

Two of the authors (EBH and JF) conducted all interviews. Arrestees were approached individually and information and explanations about the process were provided. If consent was obtained, the arrestee signed a consent form. The Composite International Diagnostic Interview (CIDI-Auto) Core version 2.1 (12-month version)[10] was initially administered, and data were recorded directly onto a laptop computer. The index offence was recorded and the 28-item General Health Questionnaire was then administered.[11]

Measures

The CIDI-Auto is a computerised, comprehensive, standardised interview schedule that explores diagnostic criteria for multiple mental disorders. Only the demographic and drug and alcohol modules were administered in this study. Diagnoses were determined in accordance with the *Diagnostic and statistical manual*, fourth edition.[12] Diagnostic criteria for substance abuse and dependence were explored. "Substance abuse" is defined as a maladaptive pattern of substance use that causes clinically significant impairment in aspects of a person's life. "Substance dependence" is more severe, manifesting in multiple physiological and psychological symptoms. The two categories were considered mutually exclusive (ie, substance abuse was not

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recorded for a substance if the criteria for dependence were met). The CIDI-Auto is considered particularly useful for drug and alcohol settings,[13] and has been used successfully in custodial settings.[5]

The participant's index offence was recorded. This was obtained by self-report and, in most cases, was confirmed by the police bench charge sheets. Offences were classified into 16 groups according to the Australian Standard Offence Classification (Queensland Extension) 2000,[14] and then reclassified into eight general groups for making comparisons.

The 28-item version of the General Health Questionnaire (GHQ-28) is an established, well-validated and reliable measure of psychological health.[11] The total score is derived from the sum of four subscales, and a score of 5 or more is considered to indicate "psychiatric caseness".[11]

Ethical considerations

Ethical approval was obtained from the Human Research Ethics Committee of the Prince Charles Hospital health service district. Arrestees were given information sheets, a verbal explanation and a consent form. Interviews were conducted in "non-contact" interview rooms connected to the cellblocks via electronically controlled doors. These were safe, confidential, did not require police presence, and allowed adequate communication. All data were identifiable only by a number; no names were recorded and data were not provided to the police.

Efforts were made to ensure that arrestees understood the confidential nature of the data collection and that a decision not to participate or to cease the interview at any stage was freely available and would not prejudice them in any way. All arrestees had access to medical treatment; if it was felt appropriate and urgent, there was liaison with the watch house medical staff.

Statistical analysis

Data analysis involved descriptive statistics, including percentages, means and estimates of variance. Multiple logistic regression was used to determine any significant associations between age and sex and substance-use diagnosis.

RESULTS

During the 5 weeks, 731 people were detained in the watch house. After excluding serving prisoners in transit or awaiting court, and arrestees who were released, placed on police bail or transferred to other settings before 12 hours, there were 345 eligible subjects, of whom 288 (83.5%) agreed to participate. The "missed" population ($n=43$) comprised those detained for 12 hours or more who were not interviewed before their court appearance or release, and those who were considered by police as inappropriate for interview because of behavioural disturbance. Fourteen arrestees did not consent to be interviewed, and two did not wish to complete the GHQ-28.

1: Characteristics of the subjects

	Male ($n=222$)	Female ($n=66$)	Total ($n=288$)
Mean age (years)	28.8	28.9	28.8
Age range (years)	17–71	17–48	17–71
Marital status			
Married	9.9%	7.6%	9.4%
Widowed	0.9%	0	0.7%
Divorced/ Separated	10.9%	12.1%	11.1%
Never married	78.3%	80.3%	78.8%
Living with defacto/spouse	36.9%	30.3%	35.4%
Living alone	63.1%	69.7%	64.6%
No. of children			
Mean	1.0	1.6	1.2
Range	0–8	0–7	0–8
Employment			
Unemployed	65.3%	69.7%	66.3%
Mean months employed in past year	4.2	2.8	3.9
Education			
Student	5.9%	10.6%	6.9%
Graduated	15.3%	9.1%	13.9%
Did not graduate	78.8%	80.3%	79.2%
Years of school completed	10.3	10.6	10.4
Index offences			
Violence	29%	15%	26%
Theft	37%	49%	40%
Drugs	14%	20%	15%
Public order	5%	6%	5%
Traffic	5%	3%	5%
Breach*	9%	5%	8%
Miscellaneous	1%	2%	1%

* Breach refers to offences against justice procedures (eg, breach of bail or parole).

Demographics

The mean ages of the participants (Box 1) did not differ substantially from the "missed" male population (28.1 years); the "missed" female population and the "refused" population were too few for meaningful comparison. Nearly two-thirds of the sample were single and unemployed before their arrest (Box 1). Most did not graduate from school.

Substance-use disorders

The prevalence of substance-use disorders was high, and rates of dependence were substantially higher than rates of abuse (Box 2). Nearly 80% of the men and 85% of the women were dependent on at least one substance. Amphetamine, marijuana, alcohol and opioid use disorders were the most common (Box 2). Women were more likely than men to have an amphetamine use disorder (OR, 2.03; 95% CI, 1.14–3.64; $P=0.02$) and less likely to have an alcohol use disorder (OR, 0.43; 95% CI, 0.22–0.82; $P=0.01$).

Intravenous drug use was reported by 58.1% (95% CI, 51.6%–64.6%) of men and 68.2% (95% CI, 57.0%–79.4%) of women (OR, 1.68; 95% CI, 0.92–3.09; $P=0.05$).

Comorbidity of substance-use disorders was common, with 54.5% (95% CI, 48.7%–60.3%) of arrestees having two or more substance-use disorders (26.4% had three or more). More women (59%) than men (53.2%) had two or more substance-use diagnoses. Comorbidity was highest in the 17–24-year age group, with about 60% of men and 82% of women having two or more substance-use disorders.

The rates of substance-use disorders were high (above 67%) across all age groups; all women aged 17–24 ($n=22$) reported a substance-use disorder.

Psychological morbidity

The mean GHQ-28 scores for men and women were well above the cut-off of 5 or more (Box 3). Women were more likely than men to reach psychiatric caseness (OR, 3.49; 95% CI, 1.19–10.2; $P=0.02$).

Arrestees with a substance-use disorder were more likely than those without a substance-use disorder to show psychiatric caseness (no substance-use disorder, 27/

2: Twelve-month prevalence rates for substance-use disorders

DSM-IV Diagnosis	Men	Women
Any substance	86.5% (82.0%–91.0%)	84.8% (76.1%–93.5%)
Dependence	78.8% (73.5%–84.1%)	84.8% (76.1%–93.5%)
Abuse	26.6% (20.8%–32.4%)	25.8% (15.2%–36.4%)
Alcohol	39.7% (33.3%–46.1%)	22.7% (12.6%–32.8%)
Dependence	32.0% (25.9%–38.1%)	19.7% (10.1%–29.3%)
Abuse	7.7% (4.2%–11.2%)	3.0% (0–7.1%)
Amphetamines	43.7% (37.2%–50.2%)	59.1% (47.2%–71.0%)
Dependence	40.5% (34.0%–46.9%)	51.5% (39.4%–63.6%)
Abuse	3.2% (0.9%–5.5%)	7.6% (1.2%–14.0%)
Cannabis	41.0% (34.5%–47.5%)	39.4% (27.6%–51.2%)
Dependence	29.7% (23.7%–35.7%)	24.2% (13.9%–34.5%)
Abuse	11.3% (7.1%–15.5%)	15.2% (6.5%–23.9%)
Opioids	32.9% (26.7%–39.1%)	40.9% (29.0%–52.8%)
Dependence	30.2% (24.2%–36.2%)	40.9% (29.0%–52.8%)
Abuse	2.7% (0.6%–4.8%)	0
Sedatives	16.2% (11.4%–21.0%)	21.2% (11.3%–31.1%)
Dependence	11.7% (7.5%–15.9%)	16.7% (7.7%–25.7%)
Abuse	4.5% (1.8%–7.2%)	4.5% (0–9.5%)
Others*	5.5% (2.5%–8.5%)	6.0% (0.3%–11.7%)
Dependence	3.3% (1.0%–5.7%)	3.0% (0–7.1%)
Abuse	2.2% (0.3%–4.1%)	3.0% (0–7.1%)

* Men: cocaine (dependence, 2.3%; abuse, 1.4%), hallucinogens (dependence, 0.5%; abuse, 0.8%), inhalants (dependence, 0.5%). Women: cocaine (dependence, 3.0%; abuse, 1.5%), hallucinogens (abuse, 1.5%).

40; with substance-use disorder, 215/246; OR, 3.48; 95% CI, 1.62–7.49; $P<0.01$). The prevalence of psychiatric caseness increased with the number of comorbid substance-use disorders.

Index offences and substance use

Theft, violence and drug-related crimes were the index offences in 80% of the male arrests and 84% of the female arrests (Box 1). Analysis of the association between substance-use disorder and crime was complicated by the comorbid substance abuse in the population. People arrested for violence, theft, drug and public-order offences were likely to have multiple substance-use disorders (Box 4).

DISCUSSION

We found that most arrestees had at least one substance-use disorder in the previous 12 months, and more than half had multiple substance-use disorders. The prevalence of substance dependence was very high. Psychological morbidity was high in both men and women, and more likely in those with a substance-use disorder. Most subjects had been arrested for violence, theft or drug-related charges.

There was a strong association between having a substance-use disorder and being arrested. The prevalence rate of around 86% in our study is substantially higher than in the National Survey of Mental Heath and Well Being, where the prevalence rate for an Australian community sample was 7.7%.[15]

A limitation of our study was the difficulty in obtaining a truly representative sample of arrestees. Despite the relatively high acceptance and completion rates, there were people who did not consent to participate, people who were missed and people whom it was not possible to interview. Although it is unlikely that a significant change to the findings would have resulted from these omissions, it must be considered. Also, the study relied on self-report, and so is potentially subject to reporting bias. Arrestees may have modified their responses in the belief that it may help or hinder them through the health or criminal justice systems.

The limitations of the measures should also be considered. With CIDI-Auto, false positives are unlikely,[10] suggesting the reported prevalence rates for substance-use disorders are not likely to be overestimated. The GHQ-28 was originally designed for use in community populations, and the validity of the cut-off scores for psychiatric caseness in arrestees has not been determined. An overestimate of the psychological morbidity may have resulted.

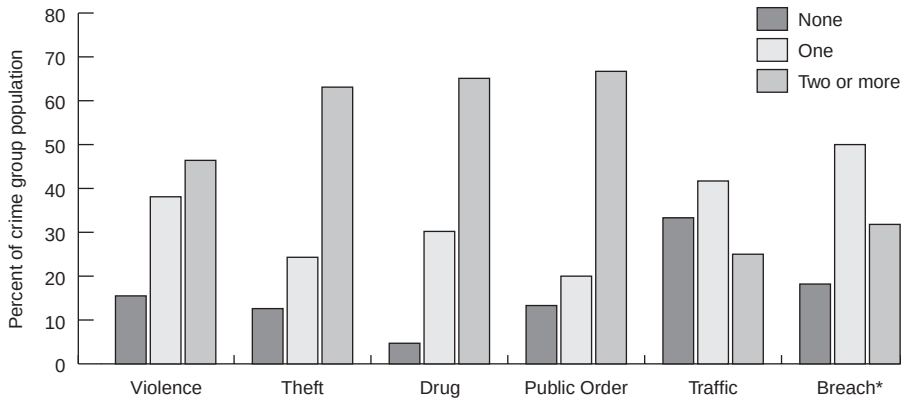
The high prevalence of substance-use disorders among arrestees was not unexpected given the association between substance use and crime. Previous studies in prison populations and studies involving urine drug testing of arrestees have supported this view.[5-8] Our findings provide a detailed picture of the extent of the problem in arrestees in Brisbane.

The association between severe substance misuse and crime is likely to be multifactorial. People with severe substance-use problems are likely to engage in criminal activity to acquire substances and fund their habits.[16] They are also likely to suffer the manifestations of severe substance-use problems, such as disorganisation, impulsivity, violence and recruitment of adversity, which can perpetuate involvement in crime.[1,17,18] Alternatively, crime and severe substance misuse may be manifestations of other factors inherent in an

3: General Health Questionnaire results

	Men		Women	
Total caseness (95% CI)	81.8%	(76.7%–86.9%)	93.9%	(88.1%–99.7%)
Mean score (95% CI)	12.3	(11.32–13.28)	14.3	(12.60–16.07)
Subscales (mean scores [95% CIs])				
Anxiety and insomnia	4.16	(3.87–4.46)	4.79	(4.29–5.27)
Somatic complaints	3.46	(3.15–3.76)	3.94	(3.37–4.5)
Social dysfunction	2.49	(2.18–2.78)	2.51	(1.96–3.06)
Severe depression	2.19	(1.8–2.5)	3.10	(2.50–3.69)

4: Association between index offences and number of substance-use diagnoses



*Breach refers to offences against justice procedures (eg, breach of bail or parole).

individual, such as personality traits or disorder.[19]

The high prevalence of opioid, marijuana and alcohol disorders was consistent with published findings. However, in our population, amphetamine use disorders were most common. This has not previously been noted in offender studies. It is of concern to note recent national findings suggesting a general escalation in the prevalence of amphetamine misuse.[20] The prevalence in our study may reflect the availability and popularity of these drugs in local drug markets.

Also of major concern was the high prevalence of reported intravenous drug use (IVDU), placing our subjects at risk of the medical sequelae associated with IVDU, such as hepatitis and HIV. These findings have implications for health service provision, as substance misusers who use drugs intravenously have higher rates of developing dependence, greater psychological distress, and higher rates of associated mental illness.[21]

The high prevalence of psychological morbidity in the sample was not surprising. The arrestees were incarcerated, facing criminal charges, and likely to be withdrawing from substances. Nevertheless, that most were psychologically distressed raises concern about the mental health status of this group. Many studies have reported higher rates of mental illness in offender populations than in the community.[5,6,22] The rates of comorbid mental illness in people with substance-use disorders are also high.[15,23,24] The prevalence of such extensive psychological morbidity indicates a need for psychiatric services in the care and assessment of arrestee populations, and may raise questions of fitness-to-plead in particularly unwell individuals.

Most studies of offenders have focused on male populations. The limited epidemiological data on female offenders generally suggest that female offenders experience greater adversity and more severe mental health problems.[25] Our findings suggest this is also the case for female arrestees. Women were more likely than men to report substance dependence, IVDU, amphetamine use disorders, and psychological morbidity. Thus, female arrestees represent a particular "at-risk" subgroup of people in custody, and their specific needs should be recognised in planning service provision.

The extent of the problems justifies partnerships between the health and criminal justice systems. Addressing these problems may not only reduce morbidity for the individuals, but may also help address the community problem of drug-related crime, given that most arrestees return to the community rather than go to prison. Providing adequate treatment and rehabilitation for this group in the long term may affect the rates of recidivism, the spread of communicable diseases and the prevalence of illicit substance use in both custodial and community settings.

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COMPETING INTERESTS

None Identified.

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