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## DRUG-RELATED AGGRESSION AMONG INJECTING DRUG USERS

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Recent years have seen the diversification of the methamphetamine markets in Australia, with increased availability and the use of more potent forms of methamphetamine such as ice/crystal and base methamphetamine.<sup>1</sup> Intoxication due to the use of stimulants such as methamphetamine has been associated with aggressive and violent behaviour. The connection is not a direct causal relationship, but is thought to be influenced by a number of other factors such as individual, situational and cultural factors.<sup>2,3,4,5</sup>

As a consequence of these changes to the methamphetamine market, there has been understandable concern that there could also be a concomitant increase in aggressive behaviour among those using the drug.

An association between alcohol and aggression is established<sup>2,3</sup>, although a range of other factors, such as context, pharmacology and individual differences, also play a role.<sup>3,6,7</sup> Evidence supporting a link between benzodiazepines and aggression is less conclusive. However, as with alcohol, a wide range of variables

including age, genetics, mood, environment and personality characteristics, such as poor impulse control, have been implicated in modifying individual responses.<sup>8,3</sup>

This article examines associations between self-reported aggressive behaviour and substance use among an Australia-wide sample of injecting drug users (IDU), where substance-related aggression was defined as aggression while being either under the influence of a drug or during withdrawal.

### METHODS

The study utilised the cross sectional survey component of the Illicit Drug Reporting System (IDRS), an annual survey of IDU in metropolitan Australia.

Participants were injecting drug users (n=948) recruited in key drug market areas in capital cities in all Australian jurisdictions. To be eligible, participants had to have been injecting at least monthly during the six months preceding the interview and have lived for at least 12 months in the capital city in which they were interviewed. Data are presented here from 2004. The number of participants from each state or territory were: NSW 157, Victoria 150, Northern Territory 111, Queensland 129, Australian Capital Territory 100, South Australia 101, Tasmania 100, and

**TABLE 1**

**DEMOGRAPHIC CHARACTERISTICS OF THE INJECTING DRUG USER SAMPLE, (N=948), AUSTRALIA, 2004**

Characteristic	%
Male	66
English-speaking background	95
Aboriginal or Torres Strait Islander*	10
Employment:	
Unemployed / on income support	77
Full-time employment	10
Part-time / casual employment	5
Student	2
Home duties	6
Prison history	46
Currently in drug treatment	
Methadone	30
Buprenorphine	12
Other†	4
Not currently in treatment	54

Source: Illicit Drug Reporting System

\* Percentage reflects all jurisdictions except NSW, where data were not collected in 2004.

† Includes, but is not restricted to, counselling, naltrexone, de-tox, therapeutic community and Narcotics Anonymous.

Western Australia 100. Each jurisdiction aims to recruit 100 participants each year, with the exception of NSW and Victoria, where 150 are recruited.

The IDRS IDU survey contains questions on a number of areas including: demographic information; drug use history; the price, perceived purity and availability of illicit drugs; criminal activity; injecting risk behaviours; health; and general drug trends. In 2004, in response to

concerns raised about substance-related aggression, the following self-report items were included: 'In the last six months have you become verbally aggressive [threatening, shouting, abusive] following the use of alcohol and/or any other drug?' and 'In the last six months have you become physically aggressive [shoving, hitting, fighting] following use of alcohol and/or any other drug?' Questions were worded in such a way that participants might interpret them as referring to while they were under the influence of a drug, while experiencing withdrawal, or both. The questions could be answered by referring to incident(s) in which one or both forms of aggression (verbal/physical) were experienced. Multiple drugs could be nominated, referring to one or more occasions of aggression. However, it was not possible to identify particular combinations of drugs that may have been implicated.

IDU were interviewed between June and August of each year. Interviews took approximately 30 to 50 minutes to complete. The method of recruitment has remained consistent across years and jurisdictions, and further details are available elsewhere.<sup>9</sup>

Data were analysed using SPSS for Windows, Release 13.0 (2004). Statistical tests were two tailed using a 5 per cent level of significance. Categorical variables were analysed using a multivariate logistic regression and odds ratios with 95 per cent confidence intervals were calculated.

**RESULTS**

**Demographics**

The majority of the sample were male, from an English-speaking background, and with a mean age of 33 years (see Table 1). The IDRS sample in general represents a marginalised group, with large numbers of participants reporting that they were unemployed or receiving income support (77 per cent), had significant prison histories and were poorly educated (with a mean of 10 years of education,

**TABLE 2**

**FREQUENCY OF DRUG USE\* IN THE PAST SIX MONTHS AMONG INJECTING DRUG USERS, BY DRUG, AUSTRALIA 2004 (N=948)**

Drug	Injecting drug users reporting use in the past 6 months		Median number of days used in the past 6 months among those reporting use in the past 6 months	
	n	%		
Heroin	657	69	72	(3 days/week)
Benzodiazepines	633	67	30	(1-2 days/week)
Alcohol	645	68	12	(once per fortnight)
Speed (powder form)	501	53	9	
Base	357	38	10	
Ice	488	52	6	
Methamphetamine (any form)†	689	74	22	(once per week)

Source: Illicit Drug Reporting System

\* 'Use' refers to any of the following: injection, inhalation, ingestion and/or intranasal administration.

† Includes 'speed' (the powder form, rather than the generic term applied to all forms of amphetamine/methamphetamine), base (aka 'pure'), ice (aka 'crystal', 'shabu') and liquid methamphetamine ('oxblood').

range 2-13 years). Although not strictly comparable, only 5 per cent of the general population are unemployed at any one time (this figure does not include those on income support).<sup>10</sup>

### Recent drug use

Recent use refers to use on at least one occasion in the six months preceding the participant's interview. As has been demonstrated elsewhere, polydrug use is the norm among Australian IDU, and high rates of polydrug use were observed in this sample (Table 2). Full results of recent drug use patterns by the 2004 national sample are reported elsewhere.<sup>9</sup>

### Self-reported aggressive behaviour

Overall, 28 per cent of participants reported becoming verbally aggressive following use of alcohol and/or another drug in the six months preceding their interview (Figure 1). A smaller proportion (15 per cent) reported becoming physically aggressive following substance use in the preceding six months. There were no significant gender differences. The most commonly reported drugs after which aggression occurred were alcohol, methamphetamine (particularly ice/crystal), benzodiazepines and heroin.

Logistic regressions were conducted to determine predictors of verbal and physical self-reported substance-related aggression. Variables that were significant at the univariate level were included in the model; these were drug of choice, age, arrest within the past year and self-reported crime in the past month. Participants reporting methamphetamine (including ice/crystal) as their drug of choice were significantly more likely to report becoming verbally and physically aggressive than those reporting

preference for another drug (Table 3).

Age was also significantly associated with substance-related physical aggression, with younger IDU (under 25 years of age) more likely to report becoming physically aggressive following use of a drug than those aged 25 and over (Table 3). This was not due to heavier methamphetamine use in this group. There was no association between particular age groups and self-reported verbal aggression.

### Criminal activity

Participants reporting a prison history (46 per cent of the sample) were no more or less likely to report substance-related aggressive behaviour towards another person. Those who reported having been arrested in the preceding 12 months (42 per cent of the sample), however, were more likely to report having become verbally and/or physically aggressive following drug use (Table 3).

Those IDU who reported committing a crime in the preceding month (49 per cent, n=453) also reported significantly higher levels of aggression than those who did not report recent criminal activity (Table 3).

## DISCUSSION

Although collection of more specific information surrounding the frequency, occasions, situations and contexts in which aggression occurred was beyond the scope of the current project, these findings confirm anecdotal reports suggesting that injecting drug users both experience and are subject to substantial levels of substance-related aggression. Consistent with previous research, three of the four most commonly reported drugs preceding aggressive behaviour were alcohol, methamphetamine (particularly ice/crystal) and benzodiazepines.

It may seem surprising that heroin, a depressant not known for its aggression-inducing qualities, was also commonly nominated as being linked to aggressive behaviour. This may be due partly to the high rates of heroin use among the sample as a whole. It is also likely, however, that results may reflect behaviors during withdrawal from heroin—for example being more prone to aggression when feeling unwell, and/or engaging in aggressive behaviour to obtain the drug—rather than its direct effects per se. This will be investigated in more detail in the 2005 IDRS (forthcoming).

Participants with a preference for methamphetamine were more likely to report becoming verbally and physically aggressive following use of a drug than participants nominating another substance (typically heroin) as their drug of choice. As methamphetamine is increasing in availability in NSW, police and health agencies may see an increase in methamphetamine-related aggression or violence. This has implications for treatment services, given that half of the current sample were engaged in treatment (mainly opioid pharmacotherapy). Box 1 contains a list of measures that could assist health and other sectors

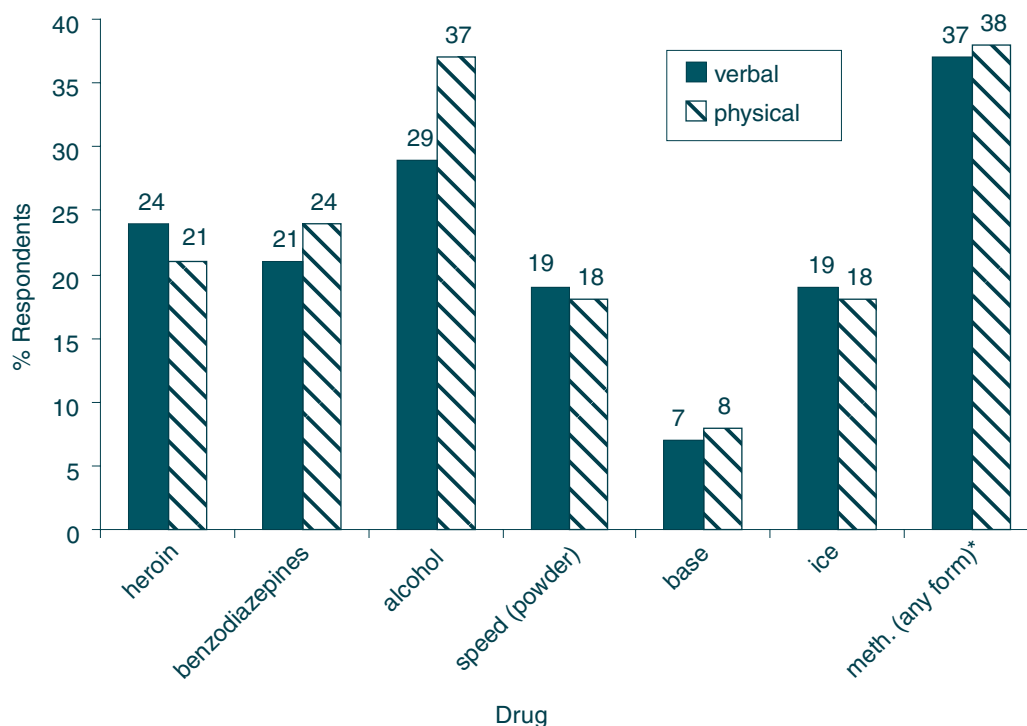
### BOX 1

#### POLICIES FOR HEALTH SERVICES TO HELP MANAGE POTENTIAL AGGRESSIVE BEHAVIOUR AMONG THE INJECTING DRUG USER POPULATION

- The development and regular review of management strategies for staff and client safety
- Improving the competence and safety of staff working with clients or users who may be prone to aggressive behaviour. This may include training for dealing with difficult clients, increasing awareness of security protocols for staff, and improving co-operative links between mental health, law enforcement and drug service personnel.
- Providing anger management and assertiveness training to health service clients, particularly younger users.
- Providing staff training in the identification, management and/or treatment of individuals with signs of amphetamine psychosis.

**FIGURE 1**

**PROPORTIONS OF INJECTING DRUG USERS REPORTING VERBAL AND PHYSICAL AGGRESSION FOLLOWING USE OF A DRUG (N=948), AUSTRALIA, 2004**



Source: Illicit Drug Reporting System

\* Includes 'speed' (referring to the powder form, rather than the generic term applied to all forms of amphetamine/methamphetamine), base (aka 'pure'), ice (aka 'crystal', 'shabu') and liquid methamphetamine ('oxblood'; not shown separately).

**TABLE 3**

**PROPORTIONS OF INJECTING DRUG USERS REPORTING SUBSTANCE-RELATED AGGRESSION, AND ODDS RATIOS, FOR DRUG OF CHOICE, AGE GROUP, RECENT ARREST AND CRIME COMMITTED IN PAST MONTH, (N=948), AUSTRALIA, 2004**

	n	Participant becomes verbally aggressive			Participant becomes physically aggressive		
		%	OR	95% CI	%	OR	95% CI
<b>Drug of choice</b>							
Methamphetamine (any form) †	190	37	1.69	1.18–2.37**	21	1.68	1.10–2.57*
Other^	758	25			14		
<b>Age group</b>							
Under 25 yrs	171	36	1.33	0.92–1.92	23	1.63	1.06–2.50*
25 years and over	777	26			13		
<b>Arrested in past 12 months</b>							
Yes	398	34	1.42	1.04–1.92*	20	1.52	1.04–2.24*
No	545	23			11		
Unknown	5						
<b>Committed crime in last month</b>							
Yes	453	34	1.75	1.29–2.38***	21	2.18	1.47–3.24***
No	485	21			10		
Unknown	10						

Source: Illicit Drug Reporting System

† Including ice/crystal (n=86)

^ In the 'other' category, heroin was by far the most commonly reported drug of choice (n=545), followed by cannabis (n=68), morphine (n=55) and cocaine (n=30).

\* p<0.05    \*\*p<0.01    \*\*\*p<0.001

who regularly interact with this population to manage the potential for aggressive behaviour.

Younger IDU were more likely to report physically aggressive behaviour than were their older counterparts. IDU who had been arrested in the past year were also more likely to report substance-related aggression, as were IDU who reported committing a crime in the month preceding interview. This suggests that aggressive individuals may be more likely to come to the attention of police and have greater involvement with law enforcement and related agencies such as the Magistrates Early Referral Into Treatment program (MERIT) and Drug Courts.

These findings suggest that for a proportion of IDU, but not all, there is a link between substance use and aggressive behaviour. Unfortunately it was not possible to assess this association over time as survey items concerning substance-related aggression were first included in the IDRS questionnaire in 2004. Within this sample, it did appear that methamphetamine was attributed by IDU as being one of the drugs most commonly linked to aggressive behaviour—this was particularly true of ice/crystal.

Some drug users may be more likely to come to the attention of police because of a combination of individual predisposition and the effects of drug use. This finding suggests the importance of improving the awareness and knowledge of where to seek help among substance users, and developing harm reduction messages around methamphetamine use, such as having rest breaks between occasions of use.

While aggression may be an important issue in relation to methamphetamine use, this should not detract attention from other substances identified as related to aggression, for example alcohol, heroin and benzodiazepines. Further, the context within which substance-related aggressive incidents occur should also be considered, as previous research (and common sense) suggests that a combination of factors in addition to substance use may mediate aggressive behaviour, and might be usefully considered in future work.

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