Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 81, No. 3,

doi:10.1093/jurban/jth134

Attempted Suicide among Injecting and Noninjecting Cocaine Users in Sydney, Australia

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ABSTRACT *A sample of 183 current cocaine users, 120 primary injecting cocaine users (ICUs), and 63 primary noninjecting cocaine users (NICUs) were administered a structured interview to ascertain attempted suicide histories, methods used, and factors associated with suicide attempts. All respondents were volunteers and current cocaine users recruited through a wide range of sources. The mean age of participants was 30.1 years, and 65% were male. The ICUs were older (32.3 vs. 26.7 years, respectively), more likely to be male (72% vs. 54%, respectively), to be unemployed (84% vs. 23%, respectively) and to have a prison history (53% vs. 1%, respectively) compared to NICUs. Of the sample, 31% had attempted suicide, 18% had done so on more than one occasion, and 8% had made an attempt in the preceding 12 months. Overall, 28% of the sample had been treated by a medical practitioner after an attempt. ICUs (38%) were significantly more likely than NICUs (10%) to have attempted suicide and to have done so on more than one occasion (23% vs. 3%, respectively). The most common method used among both groups was self-poisoning (ICUs 28%, NICUs 8%), primarily by drug overdose. Violent methods had been used by 22% of ICUs and 3% of NICUs. Multivariate analyses revealed that injecting, female gender, and more extensive polydrug use were independent predictors of a suicide attempt. The prevalence of suicide in this study indicates that it represents a major clinical issue among ICUs and to a lesser extent among noninjectors of the drug. Those treating cocaine users for drug dependence need to be aware of the salience of suicide as a problem, among injectors in particular.*

KEYWORDS *Cocaine, IDU, Polydrug, Risk, Suicide.*

INTRODUCTION

The leading causes of death among drug-dependent individuals are overdose, disease, trauma, and suicide.[1–6] Although a substantial amount of research attention has been addressed to blood-borne viruses among drug users, and in more recent years to drug overdose,[7] suicide has remained a relatively low-priority issue within the drug field. The low level of attention given to suicide among drug users is curious because drug dependence has been well documented as a risk factor for suicide among the general population.[1,6,8]

Suicide accounts for between 5% and 10% of all deaths among injection drug user (IDU) populations.[5] Furthermore, excess suicide rates among drug users do not appear to be restricted to what could be characterized as high-risk IDU populations. For instance, benzodiazepine dependence has been associated with a 44-fold

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increase in suicide rates, alcohol dependence with a 6-fold increase, and cannabis dependence with a 4-fold increase.[6] Suicide is an issue that is gaining general clinical salience. There have been sharp increases over recent years in the rates of completed suicide in a large number of countries, particularly among young males.[8,9] This is relevant to drug users because males represent the majority of drug users, and drug use and dependence typically commence in the adolescent years.[10]

It is estimated that the incidence of attempted suicide is 10 to 20 times that of completed suicide.[8] The lifetime prevalence of attempted suicide among the general population in the United States, Europe, and Australia is estimated to be in the range of 3% to 5%, with 0.4%–2.2% having attempted suicide in the preceding 12 months.[11–13] Few studies have reported on rates of attempted suicide among drug users, and most have related primarily to injecting opiate users entering or enrolled in treatment.[14–20] In all reported studies, the prevalence of attempted suicide was many orders of magnitude more than that of general community samples.

Vingoe et al.[20] and Darke and Ross[15] examined heroin users enrolled in treatment and reported a lifetime prevalence of attempted suicide of 35% and 40%, respectively. Roy[18,19] reported lifetime suicide histories of 39% (cocaine) and 43% (heroin) among dependent patients enrolled in treatment. Garlow et al.[21] recently reported a strong association between suicidal ideation and drug use among entrants at a psychiatric emergency service, with the highest rates occurring among cocaine users. Importantly, many suicide attempts of drug users appear to have been recent. Suicide attempts in the preceding 12 months have been reported by 6%, 8%, and 10% of opiate users in the United States,[14] United Kingdom,[20] and Australia,[15] respectively.

Since 1998, cocaine use has arisen as a major drug problem in Australia, particularly in Sydney.[22] Cocaine use in Australia is primarily of cocaine hydrochloride powder, and the increase in cocaine use has occurred primarily among IDUs.[22] This trend has been particularly pronounced since the sharp decline in the availability of heroin in Australia in 2001, with many heroin users switching to cocaine.[23] The availability and use of crack remains rare in Australia.[23] Cocaine use is not, however, restricted to IDUs. Previous research on cocaine use in Australia has indicated a separate group of noninjecting cocaine users (NICUs), who use cocaine primarily by intranasal inhalation.[24] This group is characterized as an employed, "functional" group of cocaine users, in contrast to the characterization of primarily unemployed, drug-entrenched IDUs.[24]

The use of cocaine has been associated with a history of suicide in the US general population[11] and among cocaine-dependent users in particular; a recent study reported that 39% of cocaine-dependent patients enrolled in treatment had suicide histories.[18] To date, however, no study has specifically examined the suicide histories of a broad sample of dependent and nondependent cocaine users. In particular, the comparative rates of suicide among injecting cocaine users (ICUs) and functional NICUs have not been reported. The use of cocaine has been associated with anxiety, depression, hallucinations, delirium, and violent agitation, particularly during withdrawal, as well as higher levels of risk-taking behavior.[25,26] The relationship between the use of such a drug and self-harm is clearly an issue of clinical importance.

There are no data specifically on cocaine users and little data generally on the methods employed for suicide attempts. The limited data available from studies of heroin users indicated a different pattern from that manifested among the general population, with nonopioid overdoses most frequently reported.[5,15] Such data are

important in characterizing suicide among drug-using populations. In addition, however, such data are particularly critical in attempting to determine the relationship between suicide and drug overdose. Because of the high levels of depression among illicit drug users, it is often assumed that most overdoses are suicide attempts.[15] It is important to determine the extent to which these suicides and overdoses overlap among both ICUs and NICUs because responses to these may differ substantially. Response to accidental overdose may include addressing known risk factors for opioid and cocaine overdose, such as concomitant central nervous system depressant use[15,27] and improving responses at overdoses. Responses to suicide may more specifically aim to ameliorate depression and increase awareness of risk factors for attempted suicide among drug users.

The current study aimed to examine attempted suicide among ICUs and NICUs. Specifically, the study aimed to ascertain the lifetime and recent suicide histories among ICUs and NICUs, the methods used for suicide attempts, and the demographic and drug use factors associated with suicide histories.

METHOD

Procedure

The sample consisted of volunteers, who were paid A$20 for participation in the study. Recruitment took place from July 2002 to February 2003 by means of advertisements placed in needle exchanges, dance club magazines, rock magazines, and local newspapers and by word of mouth. Respondents approached the researcher at the needle exchange or contacted the researchers by telephone. Advertisements were placed in a variety of sources to obtain samples of both ICUs and NICUs. For instance, advertisements were placed in dance party magazines to reach NICUs, who were more likely to read such magazines. All advertisements referred to "drug use and health" and did specifically mention either cocaine or suicide.

All respondents were screened for eligibility to be interviewed for the study. The screener for the study contained a number of questions on demographics and drug use, one of which referred to cocaine. It was not obvious from the screener what the study entrance criteria were. To be eligible for participation, the respondent had to have used cocaine within the preceding 12 months. Other drug use was permitted because polydrug use is the norm among cocaine users.[22–24] Among the ICU sample, it was a requirement that the primary route of cocaine use during the preceding 12 months was by injection. Among NICUs, it was a requirement that there be no history of injecting drug use of any drug. Drug use and risk behaviors were based on the self-report of participants.

All respondents were guaranteed that any information they provided would be kept strictly confidential and anonymous. Interviews were conducted in locations determined by the participant, where they would feel comfortable and secure. These included coffee shops, parks, and the university campus. No names or contact details were required or recorded. All interviews were conducted by a member of the research team (S. K.) and took approximately 30 minutes to complete.

Structured Interview

A structured interview was developed that addressed demographic characteristics, drug use history, cocaine use history, cocaine overdose history, and severity of cocaine dependence (SDS, Severity of Cocaine Dependence Scale).[28] A presumptive

diagnosis of cocaine dependence was made for SDS scores greater than 2, a diagnostic cutoff previously determined from receiver operating curve analysis comparing SDS scores to *DSM-IV* (*Diagnostic and Statistical Manual of Mental Disorders*, 4th edition)[29] diagnoses of cocaine dependence.[30] Receiver operating curve analyses are statistical procedures to determine the optimal cutoff point of continuous measures for categorical "caseness" (e.g., cocaine dependent). Current cocaine use (preceding month) was measured using the Opiate Treatment Index (OTI).[31] OTI scores of 1 equate to one use episode a day, greater than 1 to more than daily use episodes, and scores less than 1 to less than daily use. To obtain a measure of longer term recent use, the number of cocaine use days over the preceding 6 months was also recorded.

A specialized section on suicide that had been developed and employed in previous work[15] was administered. *Attempted suicide* was defined as deliberate self-harm with the intent of causing death. This is a strict definition that excludes other forms of self-destructive behavior (e.g., slashing a limb with a knife with no intention of causing death). As such, the results of this study are likely to be conservative estimates of overall self-harm. Participants were asked if they had ever attempted suicide, how many times they had done so, and their ages at their first and most recent attempts.

Specific questions on medical interventions following attempts were asked. Participants were asked whether they had ever been treated by a medical practitioner following a suicide attempt, whether they had ever been hospitalized after an attempt, and whether they had ever been treated by a psychiatrist or psychologist after an attempt.

Participants were also asked to specify, unprompted, the methods they had employed in suicide attempts. Suicide methods were subsequently categorized into either self-poisoning or violent means. In the case of poisonings, the specific substances employed were ascertained.

Statistical Analyses

We used *t* tests for continuous data. If distributions were highly skewed, medians are reported, and Mann-Whitney U tests were conducted. For dichotomous categorical variables, odds ratios and 95% confidence intervals are reported. To determine independent factors associated with a history of attempted suicide, logistic regressions with backward elimination were performed. Goodness of fit of the final model was determined using the Hosmer-Lemeshow chi-square statistic. All analyses were conducted using SPSS for Windows (release 11.0, SPSS Inc., Chicago, IL, 2001).

RESULTS

Sample Characteristics

The sample consisted of 183 current cocaine users. The mean age of participants was 30.1 years (SD 7.9, range 18–54 years), and 68% were male. The mean years of formal school education was 10.3 (SD 1.8, range 5–12 years), and the majority (64%) were unemployed. Of the participants, 35% were enrolled in a drug treatment program, and 35% had a prison history.

There were substantial demographic differences between the two groups (Table 1). The ICU group was, on average, 6 years older than the NICU group. ICUs were more likely to be male, unemployed, and enrolled in drug treatment and to have a prison history. In fact, no member of the NICU group was enrolled in drug

TABLE 1. Demographic characteristics of injecting cocaine users (ICUs) and noninjecting cocaine users (NICUs)

	ICUs (N = 120)	NICUs (N = 67)	All (N = 183)	Comparisons
Demographics				
Age	32.3	26.0	30.1	$t_{181} = 5.5$, $P < .001$
Gender, % male	72	60	68	ns
School education, years	9.6	11.6	10.3	$t_{181} = 8.6$, $P < .001$
Tertiary education, %	24	68	39	OR 0.15 (0.08–0.29)*
Unemployed, %	84	25	64	OR 15.62 (7.38–33.05)
Enrolled in drug treatment, %	54	0	35	OR 149.88 (19.06–2,478.69)
Prison history, %	53	0	35	OR 144.98 (8.77–2,397.51)
Drug use history				
First cocaine use, years	21.8	20.2	21.2	ns
Length of cocaine career, years	10.6	5.8	8.9	$t_{181} = 4.4$, $P < .001$
OTI cocaine use, 1 month	1.4	0.2	1.0	$t_{181} = 2.6$, $P < .01$
Cocaine use days, 6 months	55.3	28.7	36.1	$t_{181} = 3.0$, $P < .01$
SDS	5.2	1.0	3.7	$t_{181} = 6.9$, $P < .001$
Cocaine dependence, %	67	14	49	OR 12.00 (5.39–26.74)
Cocaine overdose, %	17	5	13	OR 4.00 (1.14–14.03)
No. drug classes used, lifetime	10.6	8.1	9.7	$t_{181} = 8.7$, $P < .001$
No. drug classes used, 6 months	7.4	5.7	6.8	$t_{181} = 5.8$, $P < .001$

ns, not significant; OR, odds ratio; OTI, Opiate Treatment Index; SDS, Severity of Dependence Scale.
*Reference group = NICUs.

treatment, and none had ever been imprisoned. The ICU group also had fewer years of school education and was less likely to have completed tertiary education.

Drug Use History

ICUs had used cocaine for approximately 5 years longer than NICUs (Table 1). ICUs were using cocaine more frequently than NICUs, using on average 1.4 times a day compared to approximately once every 5 days, and had used cocaine on more use days in the preceding months. They also had higher levels of cocaine dependence and were more likely to have experienced a cocaine overdose. Extensive polydrug use was common among both groups, with ICUs reporting more extensive lifetime and recent polydrug use (Table 1).

Attempted Suicide History

Of the overall sample, 28% had attempted suicide, and 16% had made more than one attempt. During the preceding 12 months, 7% had attempted suicide. A history of attempted suicide was reported by 38% of ICUs and 10% of NICUs (Table 2). Repeated suicide attempts were reported by 23% of ICUs and 3% of NICUs. Thus, of the participants in the two groups who had made suicide attempts, the majority of ICUs (28/45, 62%) and a third of NICUs (2/6, 33%) had done so on more than one occasion. ICUs were over five times more likely to have attempted suicide and nine times more likely to have done so on more than one occasion.

Suicide attempts were not merely long-standing historical events, with 8% of ICUs and 3% of NICUs having made an attempt within the preceding 12 months.

TABLE 2. History of attempted suicide among injecting cocaine users (ICUs) and noninjecting cocaine users (NICUs)

	ICU (N = 120)	NICU (N = 63)	All (N = 183)	Comparisons
History				
Attempted suicide, ever, %	38	10	28	OR 5.70 (2.27–14.29)
Attempted suicide, 12 months, %	8	3	7	ns
Repeat attempts, %	23	3	16	OR 9.28 (2.13–40.40)
Time since last attempt, median*	48	40	48	ns
Age at first attempt, years*	20.7	19.7	20.6	ns
Age at last attempt, years*	25.4	20.7	24.8	ns
Medical intervention				
Treated by medical practitioner, %	32	5	22	OR 9.27 (2.73–31.45)
Admitted to hospital, %	28	6	20	OR 5.59 (1.88–16.63)
Psychiatrist treatment, %	26	6	19	OR 5.14 (1.72–15.31)
Suicide methods used, %				
Self-poisoning	28	8	21	OR 4.40 (1.62–11.93)
Heroin	17	0	11	
Benzodiazepines	16	2	11	
Barbiturates	1	0	1	
Codeine	0	3	1	
Cocaine	1	0	1	
Paracetamol	1	3	2	
Antidepressants	0	2	1	
Poison (nondrug)	2	2	2	
Violence	22	3	15	OR 8.44 (1.93–36.83)
Slitting wrist	15	3	11	
Hanging	8	0	5	
Ran in front of vehicle	3	0	2	
Jump from height	3	0	2	
Suffocation	1	0	1	
Cut throat	1	0	1	

ns, not significant; OR, odds ratio.

*Suicide history only n = 51 (ICUs, n = 45; NICUs, n = 6).

There was no difference between the groups in the 12-month prevalence of suicide or in time since most recent attempt (Table 2).

Overall, 22% of the sample of 183 cocaine users had been treated by a medical practitioner after a suicide attempt, 20% had been hospitalized, and 19% had received psychiatric or psychological attention (Table 2). Not surprisingly, given their higher level of suicide histories, ICUs were nine times more likely than NICUs to have been treated by a medical practitioner after a suicide attempt, five times more likely to have been hospitalized, and five times more likely to have received psychiatric or psychological attention (Table 2).

Methods of Attempted Suicide ICUs were four times more likely to have attempted suicide by self-poisoning and eight times more likely to have attempted suicide by violent methods (Table 2). The most common method used for suicide attempts among both groups was self-poisoning, overwhelmingly by drug overdose,

which had been employed by 28% of the ICU sample and 8% of NICUs. Among ICUs, heroin (17%) and benzodiazepines (16%) were the two drugs that had been most commonly used for deliberate overdose. No NICUs had attempted suicide using heroin or cocaine. There was no dominant drug class used for suicide among NICUs, with small proportions having used benzodiazepines, codeine, paracetamol, antidepressants, and poison.

Violent methods (e.g., slitting wrists, hanging) had been used in a suicide attempt by 22% of ICUs and 3% of NICUs. Slitting of wrists was the most common violent suicide method reported among both ICUs and NICUs.

Factors Associated With Attempted Suicide Demographic and drug use factors associated with a history of attempted suicide are presented in Table 3. Those who had attempted suicide were nearly twice as likely to be female, had fewer years of education, and were 2.5 times more likely to have a history of imprisonment. There were differences in cocaine use between those who had attempted suicide and other participants. Those who had attempted suicide had used cocaine more frequently over the preceding month and preceding 6 months, had higher SDS scores, and were more likely to be categorized as cocaine dependent. In addition, those who had attempted suicide also had higher levels of lifetime polydrug use. There were no differences in age, likelihood of having had a cocaine overdose, age of first cocaine use, or length of cocaine use career.

To determine independent factors associated with a history of attempted suicide, logistic regressions were conducted. Variables entered into the initial model were age, gender, ICU/NICU group status, years of education, prison history, cocaine use days in the last 6 months, SDS score, length of cocaine use career, and number of lifetime drug classes used. The final model was significant ($\chi^2 = 31.3$, $P < .001$) and had a good fit (Hosmer-Lemeshow $\chi^2 = 5.98$, $P > .5$) (Table 4). Significant independent predictors of a history of attempted suicide were ICU group, female gender, and a more extensive polydrug-using history. Specifically, after

TABLE 3. Factors associated with a history of attempted suicide

	Suicide (N = 51)	Nonsuicide (N = 132)	Comparisons
Demographics			
Age	31.1	29.8	ns
Gender, % female	43	28	OR 1.95 (1.00–3.81)
Education, years	9.6	10.7	$t_{181} = 3.3$, $P < .001$
Prison history, %	51	29	OR 2.57 (1.32–5.01)
Drug use			
OTI cocaine use, 1 month	1.7	0.8	$t_{181} = 1.9$, $P = .05$
Cocaine use days, 6 months	55.3	28.7	$t_{181} = 3.0$, $P < .01$
SDS, mean	5.8	2.9	$t_{181} = 4.2$, $P < .001$
Cocaine dependent, %	51	29	OR 3.58 (1.78–7.17)
Cocaine overdose, %	20	10	ns
Age first cocaine use, years	21.6	21.1	ns
Length of cocaine career, years	9.5	8.7	ns
No. drug classes used, lifetime	10.7	9.4	$t_{181} = 4.1$, $P < .001$

OR, odds ratio; OTI, Opiate Treatment Index; SDS, Severity of Dependence Scale.
*Significant difference suicide versus others.

TABLE 4. Logistic regression predicting history of attempted suicide

Variable	Odds ratio	95% Confidence interval
Group	3.82	1.32–11.11
Gender	3.06	1.42–6.62
Number drug classes used, lifetime	1.31	1.05–1.63

Injecting cocaine users=1, noninjecting cocaine users = 0; females=1, males=0.
Hosmer-Lemeshow $\chi^2 = 5.9$, $P < .5$.

taking into account the effects of other variables, the adjusted odds ratios indicated that ICUs were 3.8 times more likely to have attempted suicide, females were 3 times more likely to have attempted suicide, and extra drug class used increased the odds of having attempted suicide by 31%.

DISCUSSION

Suicide was a common occurrence among the cocaine users in this study. Overall, 1 in 3 of the overall sample had attempted suicide, and almost 1 in 10 attempted suicide in the preceding 12 months. Importantly, given that a previous attempt is predictive of future risk,[32] almost a fifth had made more than one attempt. A history of attempted suicide was more common among the ICU group, of whom 38% had attempted suicide. The high levels of suicide among the injectors in this study are similar to levels reported in the few studies that have examined attempted suicide among injecting drug users[14–20] and indicate the pervasive nature of suicide as a drug-related problem.

The levels of suicide reported here stand in sharp contrast to general population estimates of lifetime and recent suicide histories in Western countries.[11–13] The prevalence of lifetime suicide attempts among the ICUs in this sample is almost identical to that among dependent cocaine users reported by Roy[18] and to samples of opiate injectors.[14,15,19,20] Given the long drug-using histories of ICUs and their levels of dependence and polydrug use, this may not be surprising. Cocaine dependence and more extensive polydrug use were both associated with histories of suicide in this study. This was a long-standing group of IDUs, with many known suicide risk factors. It would appear that the levels of suicide reported by Roy among cocaine users entering treatment are applicable to a much broader range of cocaine users than those who have been motivated to enter treatment.

Suicide was not, however, a problem exclusive to cocaine injectors. This study represents the first in which a direct comparison of ICUs and NICUs can be made. Of cocaine users in this study, 10% with no history of injecting had attempted suicide. These figures are substantially lower than those reported among the injectors in this sample and among other samples of cocaine and opiate users.[14,15,18–20] The NICUs in this study were a substantially different group from the injectors. They were younger, better educated, more likely to be employed, and not in drug treatment and had no prison experience. In terms of drug use, they used less cocaine, were less dependent, and had less-extensive polydrug use. This group was consistent with the previous description of a functional group of cocaine users.[24] Given the greater functionality of these cocaine users compared to the injectors, a lower level of suicide would be expected. Despite this characterization, however, 10% of this group had attempted suicide, a rate twice that of the general Australian population.[13]

Medical interventions after suicide attempts were common, with a quarter of the sample having received such attention. Not surprisingly, given the higher level of attempted suicide among injectors, more ICUs had received medical interventions for an attempt than had noninjectors. The extent of medical intervention illustrates the seriousness of the suicide attempts made by the sample and the cost to the community of these attempts.

Self-poisoning, predominantly by deliberate drug overdose, was the most commonly employed means of attempting suicide among both groups. Methods of attempted suicide among drug users have rarely been reported.[5,15,20] The current data are consistent with earlier studies in indicating that self-poisoning with drugs represents a major means of attempted suicide among drug users. Furthermore, distinct from the general population, for whom violent methods predominate, completed suicide among drug users is overwhelmingly by self-poisoning for both genders.[5] The current data also emphasize the distinction between overdose and suicide. Deliberate heroin or cocaine poisoning represented a minority of self-poisoning acts and of all suicidal acts. Suicide and overdose represent different clinical problems that require independent intervention.

Violent methods were not uncommon, however, particularly among injectors. One in five of the ICU group had employed a violent means to attempt suicide, over eight times the rate of violent attempts among NICUs. After drug overdose, slitting of wrists was the most common suicide method among both ICUs and NICUs. It is worth reiterating that such "slashing" specifically excluded slashing without intention of causing death. The range of violent methods employed by injectors is an indication of desperation among this group.

After taking into account other variables, females were three times more likely to have attempted suicide. The preponderance of suicide attempts among females is consistent with rates among the general population,[8,9,32,33] in-treatment cocaine users,[18] and other drug users.[5] Although suicide represents a considerable clinical problem among cocaine users, it is particularly salient among females. Clinicians must be aware that female drug users, particularly female injectors, represent a particularly high-risk suicide group apart from the problems inherent in drug dependence.

Why are the rates of suicide among injectors so much higher than those of the noninjectors in this study? It has previously been noted that IDUs have substantially higher rates of known risk factors than the general population.[5] For instance, levels of childhood abuse are high among this group and may well contribute to major depression and the initiation of injecting drug use. In addition, IDUs have a number of factors relating to drug use that are not present among the general population or among more recreational noninjectors. For instance, compared to NICUs in this study, injectors were more likely to have been imprisoned and had heavier cocaine use, higher levels of dependence, and more extensive polydrug use. The role of imprisonment is illustrative. Imprisonment and imminent imprisonment have been demonstrated as salient reasons for attempting suicide among drug users.[15] No NICUs in this study had a prison history, compared to half of the injectors. Injecting drug use is a highly stressful and usually criminally involved lifestyle that may well exacerbate preexisting morbidity. It is worthy of note, as in previous studies,[5] that more extensive polydrug use was an independent risk factor for suicide. Extensive polydrug use may represent self-medication among distressed drug users.

In interpreting the results of the current study, caveats must be borne in mind. As noted, the findings of this study are based on self-report. Indeed, in many aspects of drug use and risk behaviors, self-report is essential. Fortunately, a great deal of

international research has been conducted on the accuracy of self-report among drug users. These studies have repeatedly demonstrated that, under research conditions, the self-reported drug use, crime, and risk behaviors of drug users are highly valid and reliable.[34]. Second, it must be acknowledged that the sample consisted of volunteers, which raises the question of the extent the results can be extrapolated to other cocaine users. A random, stratified sample of illicit drug users, as with any population of unknown parameters, is impossible to obtain. However, the demographic characteristics of the ICUs and NICUs are consistent with other studies of Australian cocaine users.[22,24] This in no way appeared an unusual sample of Australian cocaine users.

The current study illustrates the ubiquity of suicide as a problem among drug users and among IDUs in particular. Drug agencies and medical practitioners, in treating cocaine users, are dealing with a group with high levels of drug-related risk-taking behaviors. This group has high levels of suicide risk factors and suicide attempts. As such, screening for suicide histories among treatment entrants appears warranted, as is appropriate referral and treatment. The current study demonstrated that, although suicide is highly prevalent among IDUs, it is also a major issue among those who present as a more functional group of cocaine users.

In summary, suicide is a common occurrence and a major issue for cocaine users. Injecting cocaine use, in particular, is strongly associated with suicide. To date, this issue has received remarkably little attention. The extent of the risk indicates that suicide is a major clinical issue for those treating cocaine dependence problems.

ACKNOWLEDGMENT

This research was funded by the Department of Health and Aging. We wish to thank the staff at participating agencies, David Jones, and Joanne Ross.

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