centre lines

NDARC (19)
June 2006

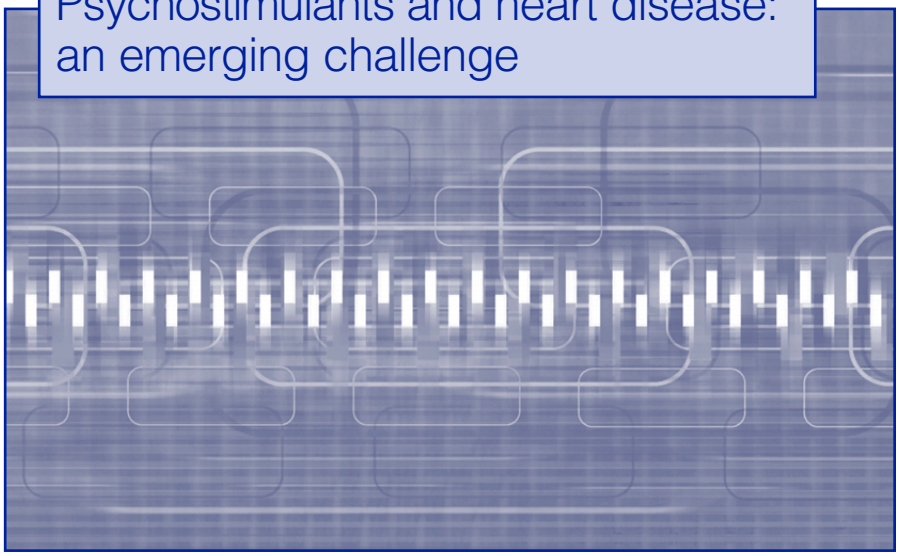
A bi-monthly newsletter from the National Centres for Drug and Alcohol Research
Published this issue by the National Drug and Alcohol Research Centre, Sydney

Funded by the National Drug Strategy

Registered by Australia Post – Print Post Publication No PP236697/00013
ISSN 1034-7259

issuing **forth**

Psychostimulants and heart disease: an emerging challenge



contents

edspace

The media loves to portray our young people as 'out of control', particularly in regards to their alcohol and other drug use. The tabloid press highlights unusual stories of young people engaging in high risk activities and portray them as the norm, when in fact all the research we have indicates that most young people haven't tried illicit drugs and never will. Even when it comes to drinking, although most young people will experiment with alcohol and many will binge drink and put themselves at risk regularly, there are still some young people (about 20%) who will choose not to drink, and even more who choose to drink responsibly.

The figures from the 2004 National Drug Household Survey examining 12–19 year olds quite clearly show that the vast majority of Australian teenagers have not used illicit drugs recently. Even cannabis, the most popular illicit drug, had not been used by 86% of teenagers in the previous 12 months. Of course, some young people do experiment. They may try a drug, particularly cannabis, a few times through adolescence or in their 20s and then never use again. Experimental use does not mean 'safe use' and things can go wrong when a young person uses any substance, whether it be legal, illegal or pharmaceutical. However, regular use over a period of time is of much more concern.

Even fewer teenagers use drugs regularly. Cannabis is the exception, with a small number experimenting with the substance and continuing to use over a period of years. The ASSAD Survey shows that a considerable number of Australian secondary students have ever tried cannabis (37% of 16 year olds). However, this does not mean that these students continue to use the drug or that they even used it more than once. Although these are the figures that are usually quoted in the media it is much more important to look at figures which give us a better indication of regular use. When students are asked if they have used cannabis 10 or more times in the previous year one can see that a far smaller number (12%) are involved in that type of activity.

As someone who works regularly in schools I am becoming increasingly frustrated about the negative way young people are portrayed in the media. So many of the teenagers I come into contact with are doing great things, however it is very rare that we celebrate some of their wonderful achievements. Instead the media highlights the unusual and bizarre and as a result the general community is convinced that the present group of young people are more problematic than previous generations, something that does not appear to be supported by the evidence.

Paul Dillon, Editor

CentreLines is a joint publication from the National Drug and Alcohol Research Centre, Sydney and the National Drug Research Institute, Perth. It is published bi-monthly and produced alternately by each Centre.

headspace

Richard Mattick

The development of a national cannabis strategy has become important. Ten years ago it was probably not possible to get a unified national approach. Cannabis was seen as less harmful than other illicit drugs, with Australia's illicit drug policy responses preoccupied with the heroin epidemic and growing opioid death rates. Last month the Australian Ministerial Council on Drug Strategy (MCDS) endorsed a national cannabis strategy.

While heroin problems were being addressed, the extent of use of cannabis remained widespread. Although there has been some recent reduction in use of cannabis, it still is the most widely used illicit drug in Australia. About 750,000 Australians aged 14 years and over use the drug each week. Age of first time use is earlier – young people are increasingly commencing cannabis use in their early to mid teens.

While it is true that many users will not experience significant problems, the early initiation of cannabis use increases the likelihood of later dependence and of cannabis-related problems. Flowering heads, the more potent parts of the plant, are increasingly used now rather than less potent leaf material. There are concerns that there have been changed patterns of use, with frequent smoking through the day becoming more common, leading to greater exposure to both smoke products and intoxication. Heavy cannabis use causes impairment in memory processes, which can lead to educational and occupational failure, and these cognitive problems may persist once heavy cannabis use is ceased. These risks need to be communicated to reduce cannabis-related harms.

There have been increasing presentations of people with mental health problems – anxiety, depression and psychosis – which appear to be associated with cannabis use. Demand for assistance with cannabis-related problems has been rising at drug-treatment centres and there are increasing hospital presentations associated with cannabis use. Better access to assistance is needed.

In addition to health responses, a national strategy also needs legal responses to the use of cannabis. Diverting users from the criminal justice system, providing them with suitable advice about their cannabis use, and equipping them with ways to reduce use when it is problematic is a sensible way forward. Recognising that commercial crops of cannabis are often associated with significant organized criminal activity is also important. The growth of cannabis in commercial quantities, the associated potential for violent crime, the drain of money from the economy through this process, and the impacts on communities, both urban but also rural and remote, must be dealt with.

The opportunity now exists to have a national approach to more effectively inform the broad community, the professional health community, the legal community (both policing and judicial), and senior decision makers about the true nature of cannabis use, its actual impacts, and how these might best be dealt with.

Of course, cannabis use is viewed by some as harmless, or less harmful than alcohol use, and is claimed to have important medicinal potential for those in pain or suffering wasting diseases; others argue that it is a toxic and dangerous drug causing drug dependence, mental illness, interpersonal problems, and physical health problems. These polarized views feed a simpler debate about the legal status of cannabis – whether cannabis use should be decriminalized (if not legalised) or continue to be prohibited. The debate dominates discussion about cannabis and distracts attention from improving our understanding of the drug and its consequences for society.

A resultant problem is that the general public, young people, regular users of cannabis, and senior government decision-makers and politicians have remained uncertain about what to believe. The prohibition debate has effectively hijacked attention from the legitimate need to provide accurate advice to the public, and has prevented effective communication about the true health and social effects of cannabis use. This, in turn, has prevented good policy responses from being developed – at least until the new strategy.

A national approach to dealing with cannabis does not preclude debate about drug law reform, or its medicinal value, from occurring. However, this should not become another opportunity for the extremes of that debate to further confuse the community about the important health and social issues facing Australia. The community deserves accurate, unbiased information abut the risks from cannabis use, and particularly health harms; there needs to be attempts in place to discourage use, but especially to discourage transitions to heavy and dependent use; we need to have a strong treatment response to the problems associated with use. The need for such a national approach is too important to allow the debate about the legal status of cannabis to prevent us from implementing good policy options. **cl**

issuing forth

Psychostimulants and heart disease: an emerging challenge

In recent years psychostimulant use has arisen to be a major clinical problem in Australia. Since the late 1990s, there have been large increases in psychostimulant use across Australia, accompanied by increases in rates of fatalities, hospitalisations and arrests. The two drugs that have contributed most to these increases are cocaine and methamphetamine. Cocaine is a major cause of drug-related death worldwide and, since 1998, has become a significant drug problem in Australia, particularly amongst injecting drug users. Contiguous with the increase in cocaine use, from the late 1990s there has been dramatic increases in methamphetamine use. This differs from previous 'epidemics' of methamphetamine use in this country, which were of methamphetamine powder. The current wave has seen the emergence and widespread use of new and potent forms of crystalline methamphetamine, commonly known as 'ice'. These forms have substantially higher potency than powder: methamphetamine powder has a street purity in the range of 10%, whereas ice ranges up to more than 80%. Recent estimates indicate that there are around 100,000 regular users of the drug, of whom 73,000 are dependent[1]. Such use is not without serious consequences, as psychostimulant users have substantially higher mortality rates than non-drug users[2].

A great deal of the clinical attention on psychostimulants has concerned psychiatric issues (particularly psychosis), and problems related to aggressiveness and violence. These are real and valid concerns that require urgent attention. Comparatively little attention, however, has been given to the cardiotoxic effects of these drugs, and awareness of these effects is alarmingly low. Cardiovascular disease is a leading cause of death in Australia. In fact amongst young Australians who die of sudden natural deaths, myocardial infarction is the second most common cause of death. One factor that may be an increasingly significant contributor to such deaths is psychostimulant use.

Firstly, let us look at cocaine, where the most research has been conducted. The most serious physical sequelae of cocaine use are cardiovascular and cerebrovascular complications[3]. Death from cocaine toxicity is due primarily to myocardial ischaemia and infarction ('heart attack'). Cocaine can cause myocardial ischaemia and infarction through increased myocardial oxygen demand,

coronary artery vasoconstriction, and coronary thrombosis. Although cocaine can induce cardiovascular complications in users with normal coronary arteries, underlying atherosclerosis has been consistently demonstrated. Such premature and accelerated coronary artery atherosclerosis increases the risk of cocaine-induced heart attacks. Chronic cocaine use has also been associated with left ventricular hypertrophy ("enlarged heart"), due to the increased myocardial oxygen demand, a serious condition that also predisposes to myocardial ischaemia and/or arrhythmia. Consistent with the cardiotoxic profile of cocaine, chest pains and palpitations are among the most common complaints among cocaine users presenting with acute cocaine toxicity. Cocaine-induced cerebrovascular accident ("stroke") is also well recognised as a major consequence of cocaine use. In a recent study, my colleagues and I demonstrated high levels of cardiovascular and cerebrovascular pathology amongst Australian cocaine-related fatalities[4]. Cardiovascular pathology was noted in over half of cases, most commonly coronary artery atherosclerosis, and left ventricular hypertrophy in 14% of cases.

To turn to methamphetamine, this is also a stimulant that increases demands upon the cardiovascular system, increasing heart rate and blood pressure, and is also known to be cardiotoxic[3,5]. Indeed, the pathological effects of amphetamine are similar to, or indistinguishable from those attributable to cocaine. Like cocaine, the primary long-term effect of amphetamine use seen in clinical presentations and fatalities is also accelerated coronary artery disease, particularly atherosclerotic stenosis or occlusion ("blocking of the arteries"). Other documented pathological effects of amphetamine include myocardial infarction/ischaemia, cardiomyopathy, sudden acute aortic dissection and coronary vasospasm[3,5]. Importantly, coronary vasospasm may occur where there is no underlying coronary artery disease. As with cocaine, chest pains, palpitations, tachycardia, and hypertension are the most common presenting symptoms in emergency departments relating to acute amphetamine intoxication. As would be expected, given this clinical profile, amphetamine-induced stroke is well documented.

Implications

As I noted earlier, the psychiatric problems and violence associated with psychostimulant use are matters of the greatest concern. There are, however, serious clinical and research implications arising from what we know about heart disease and psychostimulant use. Firstly, let us look at the research perspective. Unlike cocaine we have no Australian data on heart disease amongst methamphetamine deaths. This is, however, in the process of being remedied. Current work at NDARC in conjunction with the NSW Department of Forensic Medicine (funded by the Australian Government Department of Health and Ageing) will soon provide the first comprehensive data on cardiovascular disease associated with amphetamine-related deaths in this country. The preliminary results will be presented by Dr Sharlene Kaye at the upcoming NDARC Annual Symposium. More broadly, the data on heart disease raises the question of whether levels of cardiovascular pathology amongst the broader population of psychostimulant users are also high. Is there evidence of cardiovascular disease and accelerated atherosclerosis amongst living psychostimulant users not drawn from fatalities or presentations to clinical settings? It is possible that the disease seen amongst psychostimulant-related fatalities and clinical presentations is due to exacerbation of pre-existing cardiovascular disease. Very few studies have been conducted to date, none in Australia, and all have been conducted on cocaine users. Those that have been conducted have reported a higher prevalence of heart disease in asymptomatic chronic cocaine users compared to non-drug using controls. No equivalent data exist for methamphetamine users. Given how widespread psychostimulant use is, this is a clinical research priority of the highest importance.

From the public health and clinical perspectives, it is clear that psychostimulant users need to be made aware of the serious risks of heart disease and stroke associated with the use of these drugs. This is one of the most powerful messages we can send in our attempts to combat psychostimulant use. Focused information needs to be given to psychostimulant users on the risks of heart attack and stroke. Certainly those with a family history of heart disease, or other risk factors linked to cardiac disease (e.g. smokers, older males) are at particular risk and need to be aware of this. Within the clinical setting, regular monitoring of heart function may well be warranted.

To sum up, we are facing a period of widespread psychostimulant use. These are drugs that have the most serious physical and psychological side-effects, and whose use is to be discouraged. One of the most serious risks is heart disease, and the fact that sudden death from coronary vasospasm can occur in apparently healthy young adults indicates just how serious this risk is. These risks need to be widely appreciated amongst users of these drugs, those who provide clinical services and those who design interventions to reduce psychostimulant use. **cl**

References

1. **McKetin, R., McLaren, J. & Kelly, E.** (2005). *The Sydney methamphetamine market: patterns of supply, use, personal harms and social consequences*. NDLERF Monograph No. 13. Canberra: Comm. of Australia.

2. **Darke, S., Degenhardt, L. & Mattick, R.** (In press). *Mortality amongst illicit drug users: epidemiology, causes and intervention*. Cambridge: Cambridge University Press.

3. **Karch S.B.** (2002). *Karch's Pathology of Drug Abuse (3rd edition)*. CRC Press, Boca Raton.

4. **Darke, S., Kaye, S. & Duflou, J.** (2005). Cocaine-related fatalities in New South Wales, Australia 1993-2002. *Drug and Alcohol Dependence 77*, 107-114.

5. **Kaye, S. & McKetin, R.** (2005). *Cardiotoxicity associated with methamphetamine use and signs of cardiovascular pathology among methamphetamine users*. Technical Report No. 238. Sydney: National Drug and Alcohol Research Centre.

project **notes**

Development of materials on ecstasy and related drugs (ERDs) for primary health care practitioners

Jan Copeland, Paul Dillon, Edmund Silins, Iain McGregor (Sydney University), David Caldicott (Royal Adelaide Hospita), Robert Ali (DASSA), Ann Roche (NCETA)

Recent research by NDARC shows that a range of pharmaceuticals are deliberately used in a variety of combinations and often for contradictory purposes by people who use ERDs. This practice is of concern as the popularity of ecstasy is continuing to increase in Australia and a number of ecstasy-pharmaceutical combinations can have serious health consequences. Evidence of this emerging practice suggests there is a need for ERDs users to be provided with more information about the associated risks. One of the harms associated with ecstasy use is serotonin toxicity, commonly referred to as serotonin syndrome. Particular attention should be paid to informing ecstasy users of this potentially fatal condition which is more likely to arise from combining ecstasy with other substances that affect serotonin. These include a range of illicit drugs, antidepressants, opiate analgesics, migraine medication and herbal products. Research suggests that a majority of ERDs users use general practitioners (GPs) for information about the potential negative side-effects of drug use, including the potential harms arising from combining ERDs with pharmaceuticals. Findings from the present study will be used to inform the development of information materials for primary care practitioners. The project commenced in January 2006 and is due to be completed in July 2007.

A comprehensive literature review has been completed on ERDs and the concomitant use of serotonergic pharmaceuticals and substances.

Key focus areas of the review include current concepts in the diagnosis and treatment of serotonin syndrome, substances associated with serotonin syndrome, patterns of antidepressant use, patterns of drug use among ecstasy users and screening for illicit drug use by GPs. The study has three distinct components:

1. An anonymous structured questionnaire was distributed to a sample of 1000 metropolitan and 1000 non-metropolitan GPs across Australia. The survey aims to identify gaps in knowledge about ERDs, their side-effects and the health risks of ecstasy and the concomitant use of pharmaceuticals. It also aims to examine the management of young people presenting for the prescription of pharmaceuticals and screening for ERDs use.

2. A questionnaire with structured, semi-structured and open-ended questions has been developed to guide interviews with ERDs users who use antidepressants and other pharmaceuticals. Given the in-depth nature of the interviews, it is anticipated that a sample of 30 current ERDs users will be sufficient. The interviews will explore a range of issues including: general health; use of illicit drugs; ecstasy and the simultaneous use of pharmaceuticals and supplements; GP visitation patterns; disclosure of ecstasy use; and, the experiences of ERDs users when they visit GPs.

3. Key expert interviews with Accident and Emergency Room staff on the incidence and management of ERDs-related presentations (including serotonin syndrome) are planned to commence in January 2007. Preliminary findings from this study will be disseminated to interested medical and nursing staff at this time in a series of presentations in inner-city hospitals in Adelaide, Melbourne, Sydney and Perth.

This study is funded by the Australian Government Department of Health and Ageing and received ethics approval the UNSW Human Research Ethics Committee.

The Australian Alcohol Treatment Outcome Measure (AATOM)

Jan Copeland, Peter Gates and Melanie Simpson

The number of individuals seeking treatment for alcohol use within Australia is increasing. Findings from the NSW National Minimum Data Set (2004) show that in 2004 there were approximately 6,000 more closed treatment episodes than in 2003, reaching 136,689 individual episodes. As demands for treatment increase to cater for this growing problem, health care costs are beginning to rise. Recent figures show that gross health care spending on alcohol treatment reached approximately $76.2 million in 1988, and has only since increased (Collins & Lapsley, 2002; McCarty et al. 1998). It is a direct result of such rising health care costs and the need for improvements associated with alcohol use treatment, that an emphasis is being placed on early cost-effective treatment and ensuring that all treatment is accountable for its services.

Outcome measurement is increasingly recognized as an important and valid mechanism for comparing the performance of agencies with one another and against an established set of norms. In this context, the purpose of routine outcome measurement is to provide reliable, aggregated and comparable data that can be used to examine and evaluate the quality of health care delivery (Rock, Combrinck & Groves, 2001). Further an established OMS can help translate promising efficacy findings on new drug therapies into effective practice (Gilbody, House & Sheldon 2002). Across Australia there is a lack of any brief multi-dimensional alcohol treatment outcome measure that is reliable and valid. As alcohol is the most widely used drug across Australia, it is becoming necessary to develop such a measure.

The National Drug and Alcohol Research Centre (NDARC), in collaboration with Turning Point and the Network of Alcohol and Drug Agencies (NADA), are currently developing and evaluating a reliable and valid measure to serve the needs of the research community, health professionals, policy makers and individuals involved in the treatment of alcohol use in Australia. This project has been titled the Australian Alcohol Treatment Outcome Measure (AATOM) and has been funded by the Australian Government Department of Health and Ageing and the Alcohol Education and Rehabilitation Foundation.

Two versions of the AATOM are being developed; a longer “research version” for use by researchers in treatment evaluation studies (AATOM-R, developed by Turning Point) and a concise “clinical version” for use by clinicians for purposes of program evaluation or routine, ongoing outcome monitoring (AATOM-C, developed by NDARC). Whilst recognising the differing needs and objectives of clinicians and researchers, the two instruments are being developed so that they are sufficiently similar in item and scale construction so as to allow for valid comparison between the data collected from each. This enables results from this smaller scale research study to be compared with the larger body of data amassing from a widely used routine treatment outcome measurement instrument.

The content of the AATOM was designed by a selected group of prominent researchers and clinicians so as to place minimal time demands on clinical staff and clients, avoid duplicating other data collection and reporting requirements, be acceptable, and easy to administer, interpret and score. In order to determine the reliability and validity of the instrument, three kinds of treatment agencies have been approached in order to conduct the AATOM’s pilot testing. The testing has been designed to be conducted in two phases. Firstly the psychometric properties will be tested and then the feasibility of the interview will be assessed.

Approximately 100 clients with alcohol use concerns will be interviewed from residential facilities, 50 from therapeutic communities and 50 from agencies offering counseling in order to test the psychometric properties of the AATOM. Each of the 200 participants are being interviewed on two occasions one week apart. Half of the participants will be interviewed by the same interviewer on each occasion (to measure test-retest reliability) and half will be interviewed by different interviewers (to measure inter-rater reliability). The interview conducted at time 2, one week from the first, has additional measures included in order to assess concurrent validity. Each of the interviews conducted by NDARC will be compared with those that include biomarkers of alcohol use conducted by Turning Point in order to assess criterion validity.

In order to determine the feasibility of the instrument, clinicians and researchers will interview clients across a 12 month follow-up period. Those clients (n = 125) seeing clinicians will be interviewed before commencing treatment and then at 3 and 12 months from ‘baseline’ assessment. The clinician interviews will then be compared with researcher interviews. The researcher interviews will be dividing clients evenly so as to compare half that are followed up frequently every few months (n = 63) and half which will not be followed up until twelve months from ‘baseline’ (n = 63). Data from the feasibility testing will be entered into a statistical database and descriptive and inferential statistics will be generated on the issues of interest. Finally an additional survey assessing general feedback from clinicians will be conducted to determine if AATOM is generally acceptable in the field. For each completed follow-up interview conducted by the clinicians, the AOD agency will be reimbursed $50. This amount was estimated to cover the cost of the clinician’s time for contacting the client, conducting the interview, entering/submitting data, phone calls, stationary and photocopying. Those clients that are interviewed by researchers will be reimbursed $30 for any travel or out of pocket expenses.

An exciting advancement in the conduct of the AATOM for participating agencies has been the use of a computerized version of the instrument. Through the use of the electronic AATOM (E-AATOM) each agency is able to not only conduct the interview with several processes automated, but maintain ownership of their data and are free to conduct their own analysis after exporting the data to Microsoft Excel, SPSS or another statistical program.

Currently NDARC is working with over twenty drug and alcohol treatment agencies across NSW to complete the pilot testing of the AATOM by the end of 2007. To date 78% of the psychometric interviews have been completed and the feasibility phase has recently begun. Feedback from the participating agencies suggests that the AATOM can be feasibly conducted and integrated into existing treatment processes. Further, a brief analysis of the incomplete psychometric dataset proves adequate interrater and test-retest reliability as well as good concurrent validity.

An exploratory study examining factors associated with inhalant use and cessation amongst urban young people

Jan Copeland, Paul Dillon and Cath Finney Lamb

This study is being conducted to inform the development of prevention programs for young people around inhalant use and to improve our understanding of the reasons for cessation.

Inhalants are volatile substances that give off vapours or gas at room temperature and which can be inhaled to induce an intoxicated or psychoactive state. Most volatile substances can be cheaply and legally purchased in Australia. They include industrial and domestic solvents such as paint thinners; gasoline and glue; household aerosol propellants, such as hair sprays; and gases contained in household products and medical anaesthetics.

Inhalants are depressant drugs, which produce a euphoric effect similar to that of alcohol. Several health harms can occur with the use of inhalants. Acute effects include sudden sniffing death syndrome, asphyxia, serious injuries from accidental fires or falls, and underlying allergic reactions. Chronic inhalant use can cause serious harm to several of the body organs, including the brain, heart, lungs, kidneys, liver and bone marrow. Damage can also occur to the dermatological (skin), gastrointestinal (gut), and haematological (blood) systems.

According to the second national survey on the use of over the counter and illicit substances conducted in 1999 (and released in 2001), 32% of 12 year old males and 37% of females had ever experimented with inhalants. Little research has been conducted on the experiences of non-Aboriginal inhalant users, for example, how inhalants are used, which substances are favoured and motivations for inhalant use and cessation. Anecdotal information suggests that the reasons why young people stop use of inhalants is because of the unpleasant after-effects of using inhalants or because they go onto using other drugs. However, there is little research has been conducted about this issue.

This research aims to:

- identify and describe patterns of inhalant use
- identify and describe motivations for inhalant use
- identify and describe motivations for cessation of inhalant use
- describe potential harms that young people experience with inhalant use

A qualitative study will be conducted to enable in depth descriptions of these factors. Up to 20 in-depth interviews will be conducted with people who have used inhalants in the past, but have ceased inhalant use in the last 6 months. A thematic analysis will be conducted on the data and the interviews will be transcribed. **cl**

abstracts

A cost-effectiveness analysis of heroin detoxification methods in the Australian National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD)

Addictive Behaviours 31, 371-387

Marian Shanahan, Chris Doran, Erol Digiusto, James Bell, Nick Lintzeris, Jason White, Robert Ali, John Saunders, Richard Mattick and Stuart Gilmour

This economic evaluation was part of the Australian National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD) project. Data from four trials of heroin detoxification methods, involving 365 participants, were pooled to enable a comprehensive comparison of the cost-effectiveness of five inpatient and outpatient detoxification methods. This study took the perspective of the treatment provider in assessing resource use and costs. Two short-term outcome measures were used—achievement of an initial 7-day period of abstinence, and entry into ongoing post-detoxification treatment. The mean costs of the various detoxification methods ranged widely, from AUD $491 (buprenorphine-based outpatient); to AUD $605 for conventional outpatient; AUD $1404 for conventional inpatient; AUD $1990 for rapid detoxification under sedation; and to AUD $2689 for anaesthesia per episode. An incremental cost-effectiveness analysis was carried out using conventional outpatient detoxification as the base comparator. The buprenorphine-based outpatient detoxification method was found to be the most cost-effective method overall, and rapid opioid detoxification under sedation was the most cost-effective inpatient method.

Driving, drug use behaviour and risk perceptions of nightclub attendees in Victoria, Australia

International Journal of Drug Policy 17, 41-46

Louisa Degenhardt, Paul Dillon, Cameron Duff and Joanne Ross

Aim: In anticipation of the introduction of roadside saliva testing in Victoria for recent THC and methylamphetamine use, this study examined the prevalence of illicit drug use among nightclub attendees in Melbourne, Victoria; their transport methods; and their drug use and driving histories.

Methods: In total, 273 persons were interviewed as they entered nightclubs in the inner Melbourne area. Questionnaires addressed drug use, risk perception and driving behaviour.

Results: Drug use on the night of interview was common, with notable proportions reporting that they had used or intended to use cannabis (22%), ecstasy (18%), speed (13%) and crystal/base methamphetamine (6%). Around one in ten participants reported that on the night of interview, they would either drive or be driven by someone under the influence of alcohol (10%), cannabis (11%) and/or methamphetamine (8%). Seventy percent reporting having heard of roadside drug testing and 65% supported it. Forty percent reported that roadside drug testing would change their drug driving behaviour.

Conclusions: Roadside drug testing in Victoria may have positive impacts upon drug use and driving risk behaviours among a sample of young persons attending nightclubs. Information provision and increasing the transport options for young people will play a part in reducing the number of young clubbers who use drugs and drive.

Trauma, PTSD, and Substance Use Disorders: Findings From the Australian National Survey of Mental Health and Well-Being

The American Journal of Psychiatry 163, 652-658

Katherine Mills, Maree Teesson, Joanne Ross, and Lorna Peters

Objective: The aim of the present study was to examine the association between trauma and posttraumatic stress disorder (PTSD) and substance use disorders and to examine the correlates of substance use disorder plus PTSD comorbidity in the Australian general population.

Method: Data were collected from a stratified sample of 10,641 participants as part of the Australian National Survey of Mental Health and Well-Being. A modified version of the Composite International Diagnostic Interview was used to determine the presence of DSM-IV anxiety, affective, and substance use disorders and ICD-10 personality disorders.

Results: Substance use disorder plus PTSD was experienced by a significant minority of the Australian general population (0.5%). Among those with PTSD, the most common substance use disorder was an alcohol use disorder (24.1%), whereas among those with a substance use disorder, PTSD was most common among individuals with an opioid use disorder (33.2%). Consistent with U.S. clinical literature, individuals with substance use disorder plus PTSD experience significantly poorer physical and mental health and greater disability than those with substance use disorder alone. In contrast, individuals with PTSD alone and those with substance use disorder plus PTSD shared a remarkably similar clinical profile.

Conclusions: It is important that individuals entering treatment for substance use disorder or PTSD be assessed for this comorbidity. The addition of either disorder may present complications that need to be considered for the provision of appropriate treatment. Further research is necessary to ascertain which treatments are most effective in treating comorbid substance use disorder plus PTSD.

The use of record linkage to examine illicit drug use in pregnancy

Addiction 101, 873-882

Lucy Burns, Richard Mattick and Margaret Cooke

Aims: To examine the obstetric and perinatal outcomes for women with a drug-related hospital admission during pregnancy.

Design: Antenatal and birth admissions to New South Wales (NSW) hospitals from the NSW Inpatient Statistics Collection were linked to birth information from the NSW Midwives Data Collection over a 5-year period (1998–2002).

Measurements: Birth admissions were flagged as positive for drug use where a birth admission or any pregnancy admission for that birth involved an opioid, cannabis or stimulant-related International Classification of Diseases version 10 Australian modification (ICD-10AM) code.

Findings: A total of 416 834 live births were analysed over a 5-year period (1998–2002). Of these, 1974 pregnancies had an opioid ICD-10AM diagnosis recorded, 552 a stimulant-related ICD-10AM and 2172 a cannabis ICD-10AM diagnosis. Births in each of the drug groups were to women who were younger, had a higher number of previous pregnancies, were indigenous, smoked heavily and were not privately insured. These women also presented later in their pregnancy to antenatal services and were more likely to arrive at hospital unbooked. Neonates born to women in each of the drug groups were more likely to be premature and were admitted to neonatal intensive care and special care nursery more often, with neonates born to women in the opioid group admitted most often.

Conclusions: Linked population level administrative data is a powerful method for examining the maternal and neonatal outcomes associated with the use of specific illicit drugs during pregnancy.

The effect of persistence of cocaine use on 12-month outcomes for the treatment of heroin dependence

Drug and Alcohol Dependence 81, 293-300

Anna Williamson, Shane Darke, Joanne Ross, and Maree Teesson

Aims: To determine the effects of cocaine use across the study period on outcomes of treatment for heroin dependence 12 months post-treatment entry.

Design: Longitudinal cohort (12 months). Interviews were conducted at baseline, 3 and 12 months.

Setting: Sydney, Australia.

Participants: Four hundred ninety-five heroin users recruited for the Australian Treatment Outcome Study and re-interviewed at 12-month follow-up.

Findings: Cocaine was widely used among treatment entrants in NSW, with almost all having a lifetime history of cocaine use and almost half having used in the month preceding baseline. While there was an overall decline in cocaine use across the study period, individual use patterns varied widely. Approximately half of the cohort did not report cocaine use at any data point, with the remainder reporting having used at one (29%), two (12%), or at all three (5%) points. Cocaine use across the study period was an independent predictor of most major treatment outcomes, with more cocaine use points predicting poorer outcome. Persistent cocaine use predicted a higher prevalence of homelessness, heroin use, daily injecting, needle sharing and injection-related health problems at 12 months as well as more extensive recent polydrug use.

Conclusions: Cocaine use was common among individuals seeking treatment for primary heroin dependence in NSW. Any cocaine use over the study period was associated with poorer outcomes in virtually all areas. Persistent cocaine use over the study period, however, appeared particularly detrimental. Cocaine use among clients should evidently be a cause for concern amongst treatment providers and may warrant being specifically targeted during treatment.

The Severity of Dependence Scale (SDS) in an adolescent population of cannabis users: reliability, validity and diagnostic cut-off

Drug and Alcohol Dependence 83, 90-93

Greg Martin, Jan Copeland, Peter Gates, & Stuart Gilmour

The Severity of Dependence Scale (SDS) is a five-item scale that has been reported to be a reliable and valid screening instrument for dependence and a measure of dependence severity in adults across several substance classes. To date no data have been reported on its performance in a population of adolescent cannabis users. The current study assessed the psychometric properties of the SDS in a community sample of 14–18-year-old adolescent cannabis users (n = 100). Internal consistency (α = 0.83) and test–retest coefficients (ICC = 0.88) were high and a principal components analysis of the scale found all items to load on a single factor. Total SDS score correlated significantly with frequency of cannabis use and number of DSM-IV dependence criteria met, indicating good concurrent validity. Receiver Operating Characteristic curve analysis was used to determine the most appropriate SDS cut-off score for use as an indicator of cannabis dependence, with optimal discrimination at an SDS score of 4. These findings indicate that the SDS is a reliable and valid measure of severity of cannabis dependence among adolescents, has high diagnostic utility, and that an SDS score of 4 may be indicative of cannabis dependence.

Correlates of hepatitis C testing among heroin injectors in Sydney

Health Promotion Journal of Australia 17, 70-72

Carolyn Day and Kate Dolan

Issue addressed: Hepatitis C infection is a significant public health problem with most cases occurring among injecting drug users (IDUs). Little is known about the uptake of testing. The study examined correlates of hepatitis C testing among heroin users.

Method: Current heroin users, recruited through needle and syringe programs, methadone clinics and via snowballing, were interviewed about hepatitis C testing.

Results: Four hundred heroin users were interviewed and most (91%) reported having been tested for hepatitis C. Females and those with a history of incarceration or drug treatment were more likely to have been tested, but those who had been using for two years or less were not.

Conclusion: Hepatitis C testing is common among heroin users. Groups most at risk of infection are being tested.

Posttraumatic stress disorder among female street-based sex workers in the greater Sydney area, Australia

BMC Psychiatry 6:24

Amanda Roxburgh, Louisa Degenhardt and Jan Copeland

Background: This paper examines rates of exposure to work-related violence and other trauma, and the prevalence of lifetime and current posttraumatic stress disorder (PTSD) among female street-based sex workers. It also investigates associations between current PTSD symptoms and: demographic characteristics, psychiatric comorbidity, injecting and sex risk behaviours, and trauma history.

Methods: Cross sectional data collected from 72 women via face to face structured interviews. The interview included structured diagnostic assessment of DSM-IV PTSD; drug dependence; depression; experience of childhood trauma; and an assessment of sex working history.

Results: All but one of the women interviewed reported experiencing trauma, with the majority reporting multiple traumas that typically began in early childhood. Child sexual abuse, adult sexual assault and work related violence were commonly reported. Just under half of the women met DSM-IV criteria for PTSD and approximately one-third reported current PTSD symptoms. Adult sexual assault was associated with current PTSD symptoms. Depression and drug dependence were also highly prevalent; cocaine dependence in particular was associated with elevated rates of injecting risk and sexual risk behaviours.

Conclusions: These women reported complex trauma histories and despite ongoing opportunities for clinical intervention, they continued to experience problems, suggesting that current models of treatment may not be appropriate. More targeted interventions, and integrated mental health and drug treatment services are needed to address the problems these women are experiencing. Outreach services to these women remain a priority. Education strategies to reduce risky injecting and sexual behaviours among sex workers should also remain a priority. **cl**

recent **publications**

For more information on or copies of these publications, please go the NDARC website or contact ndarc21@unsw.edu.au

Technical Reports and Monographs

Copeland, J., Gates, P., Stevenson, D., & Dillon, P. (2006). *Young people and alcohol: Taste perceptions, attitudes and experiences.* Technical Report No. 241. National Drug and Alcohol Research Centre.

Stafford, J., Degenhardt, L., Black, E., Bruno, R., Buckingham, K., Fetherston, J., Jenkinson, R., Kinner, S., Newman, J., & Weekley, J. (2005). *Australian Drug Trends 2005: Findings from the Illicit Drug Reporting System (IDRS)* . Monograph No. 59. National Drug and Alcohol Research Centre.

Stafford, J., Degenhardt, L., Dunn, M., Fischer, J., George, J., Johnston, J., Matthews, A., Newman, J., Proudfoot, P., & Weekley, J. (2005). *Australian trends in ecstasy and related drug markets 2005: Findings from the Party Drugs Initiative.* Monograph No. 58. National Drug and Alcohol Research Centre.

For more information on or copies of these publications, please contact the relevant researcher

Published Articles, Chapters & Books

Berghuis, J., Swift, W., Roffman, R., Stephens, R., & Copeland, J. (2006). The Teen Cannabis Check-up: Exploring Strategies for Reaching Young Cannabis Users. In: **R. Roffman & R. Stephens** (eds.). *Cannabis Dependence: Its Nature, Consequences and Treatment.* pp 275-296. Cambridge University Press: Cambridge.

Burns, L., Mattick, R.P. & Cooke, M. (2006). The use of record linkage to examine illicit drug use in pregnancy. *Addiction 101*, 873-882.

Copeland , J., Dillon, P. & Gascoigne, M. (2006). Ecstasy and the concomitant use of pharmaceuticals. *Addictive Behaviors 31*, 367-370.

Copeland, J., Dillon, P., Mazurski, E., Yeung, N., Gascoigne, M., & Smith, A. (2006). *Young Users' Attitudes and Beliefs about Psychostimulants and School Drug Education.* NSW Department of Education and Training: Sydney.

Copeland, J., Gerber, S., Dillon, P., & Swift, W. (2006). *Cannabis: Answers To Your Questions.* Australian National Council on Drugs: Canberra.

Copeland, J., Gerber, S. & Swift, W. (2006). *Evidence-based Answers to Cannabis Questions.* Australian National Council on Drugs: Canberra.

Copeland, J., Howard, J. & Acuri, A. (2006). Young People in Detention. In: **P. Aggleton, A. Ball & P. Mane (eds),** *Sex, Drugs and Young People – International Perspectives.* Routledge: London.

Darke, S. (2006). Preventing Harmful Substance Use: The Evidence for Policy and Practice (book review). *Addiction 101*, 902-903.

Darke, S., Williamson, A., Ross, J., & Teesson, M. (2006). Residential rehabilitation for the treatment of heroin dependence: Sustained heroin abstinence and drug-related problems 2 years after treatment entrance. *Addictive Disorders & Their Treatment 5*, 9-18.

Day, C. & Dolan, K. (2006). Correlates of hepatitis C testing among heroin injectors in Sydney. *Health Promotion Journal of Australia 17*, 70-72.

Degenhardt, L., Day, C., Conroy, E., & Gilmour, S. (2006). Examining links between cocaine use and street-based sex work in New South Wales, Australia. *The Journal of Sex Research 43*, 107-114.

Degenhardt, L., Dillon, P., Duff, C., & Ross, J. (2006). Driving, drug use behaviour and risk perceptions of nightclub attendees in Victoria, Australia. *International Journal of Drug Policy 17*, 41-46.

Hall, W., Doran, C., Degenhardt, L., & Shepard, D. (2006). Illicit opiate abuse. In: **Jamison, D., Breman, J., Measham, A., Allenye, G., Claeson, M., Evans, D., Jha, P., Mills, A, & Musgrove (eds)**, *Disease Control Priorities in Developing Countries.* World Bank and Oxford University Press: New York.

Havard, A., Teesson, M., Darke, S., Ross, J. (2006). Depression among heroin users: 12 month outcomes from the Australian Treatment Outcome Study (ATOS). *Journal of Substance Abuse and Treatment 30*, 355-362.

Martin, G., Copeland, J., Gates, P., & Gilmour, S. (2006). The Severity of Dependence Scale (SDS) in an adolescent population of cannabis users: reliability, validity and diagnostic cut-off. *Drug and Alcohol Dependence 83*, 90-93.

Mills, K., Teesson, M., Ross, J., & Peters, L. (2006). Trauma, PTSD, and substance use disorders: Findings from the Australian National Survey of Mental Health and Well-Being. *The American Journal of Psychiatry 163*, 652-658.

O'Callaghan, F., Reid, A. & Copeland, J. (2006). Risk perception and cannabis use among a sample of young adults. *Journal of Substance Use 11*, 129-136.

Peters, R., Copeland, J., Dillon, P., & Larance, B. (2006). *Muscle Boundaries*, HIT, Liverpool.

Roxburgh, A., Degenhardt, L. & Copeland, J. (2006). Post-traumatic stress disorder among female street-based sex workers in the greater Sydney area, Australia. *BMC Psychiatry 6:* 24.

Shanahan, M., Doran, C., Digiusto, E., Bell, J., Lintzeris, N., White, J., Ali, R., Saunders, J., Mattick, R., & Gilmour, S. (2006). A cost-effectiveness analysis of heroin detoxification methods in the Australian National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD). *Addictive Behaviours 31*, 371-387.

Stephens, R., Roffman, R., Copeland, J., & Swift, W. (2006). Cognitive Behavioural and Motivational Enhancement Treatments. In: **R. Roffman & R. Stephens** (eds.). *Cannabis Dependence: Its Nature, Consequences and Treatment.* pp 131-153. Cambridge University Press: Cambridge.

Teesson, M., Baillie, A., Lynskey, M., Manor, B., & Degenhardt, L. (2006). Substance use, dependence and treatment seeking in the United States and Australia: A cross-national comparison. *Drug and Alcohol Dependence 81*, 149-155.

Teesson, M., Havard, A., Ross, J., & Darke, S. (2006). Outcomes after detoxification for heroin dependence: Findings from the Australian Treatment Outcome Study (ATOS). *Drug and Alcohol Review 25*, 241-247.

Williamson, A., Darke, S., Ross, J., & Teesson, M. (2006). The effect of persistence of cocaine use on 12-month outcomes for the treatment of heroin dependence. *Drug and Alcohol Dependence 81*, 293 – 300.

staff **list**

National Drug and Alcohol Research Centre

Staff as of 1 June, 2006

Richard Mattick	Director, Professor
Maree Teesson	Deputy Director, Associate Professor
Jan Copeland	Associate Professor
Shane Darke	Associate Professor
Kate Dolan	Associate Professor
Louisa Degenhardt	Senior Lecturer
Anthony Shakeshaft	Senior Lecturer
Lucy Burns	Lecturer
Joanne Ross	Lecturer
Wendy Swift	Lecturer
Delyse Hutchinson	Research Fellow
Rebecca McKetin	Research Fellow
Katherine Mills	Postdoctoral Research Fellow
Claudia Sannibale	Research Fellow
Eva Congreve	Archivist
Paul Dillon	Media Liaison/ Information Manager
Marian Shanahan	Health Economist
Heli Wolk	Professional Officer
Annie Bleeker	Senior Research Officer
Courtney Breen	Senior Research Officer
Elizabeth Conroy	Senior Research Officer
Cathy Finney Lamb	Senior Research Officer
Peter Gates	Senior Research Officer
Amy Gibson	Senior Research Officer
Cherie Kam	Senior Research Officer
Sharlene Kaye	Senior Research Officer
Briony Larance	Senior Research Officer
Virginia Macdonald	Senior Research Officer
Greg Martin	Senior Research Officer
Bradley Mathers	Senior Research Officer
Jen McLaren	Senior Research Officer
Susannah O'Brien	Senior Research Officer
Heather Proudfoot	Senior Research Officer
Amanda Roxburgh	Senior Research Officer
Fiona Shand	Senior Research Officer
James Shearer	Senior Research Officer
Jenny Stafford	Senior Research Officer
Devon Indig	Doctoral Candidate
Nickie Newton	Doctoral Candidate
Laura Vogl	Doctoral Candidate
Emma Black	Research Officer
Gabrielle Campbell	Research Officer
Matthew Dunn	Research Officer
Alys Havard	Research Officer
Kate Hetherington	Research Officer
Grace Ho	Research Officer
Erin Kelly	Research Officer
Sarah Larney	Research Officer
Elizabeth Maloney	Research Officer
Caitlin McCue	Research Officer
Steve Riddell	Research Officer
Lisa Robins	Research Officer
Edmund Silins	Research Officer
Bronwyn Steadman	Research Officer
Melanie Simpson	Research Officer
Michelle Torok	Research Officer
Elissa Wood	Research Officer
Julie Hodge	Administrative Assistant/ Receptionist
Carla Santos	Administrative Assistant/ Receptionist

Conjoint Appointment

Wayne Hall	Visiting Professor
James Bell	Associate Professor
Andrea Mant	Associate Professor
Catherine Spooner	Senior Lecturer
Adam Winstock	Senior Lecturer
Alex Wodak	Senior Lecturer
Mark Montebello	Lecturer

Visiting Fellows

Robert Ali	Visiting Fellow
John Howard	Visiting Fellow
John Lewis	Visiting Fellow
Ingrid Van Beek	Visiting Fellow

feedback & **subscriptions**

We welcome your feedback on all issues discussed in *CentreLines*. If you would like to write to us please address all correspondence to:

The Editor, National Drug and Alcohol Research Centre,
University of New South Wales, Sydney NSW 2052

If you currently subscribe to *CentreLines* and require future issues to be sent to a new address please fill out the Change of Address form.

If you would like to be included on the *CentreLines* subscription list, fill out the New Subscriber form below. Please note that if you wish to receive NDRI's *CentreLines*, you will need to fill out the form below.

These forms should be returned to:

National Drug and Alcohol Research Centre
University of New South Wales, Sydney NSW 2052

New Subscriber Details

Please add me to the mailing list for my free copies of *CentreLines*.

Name: Ms / Mr / Dr

Title:

Organisation:

Department:

Address:

Postcode:

Phone No:

Fax No:

Issues Required: ☐ NDARC ☐ NDRI ☐ Both

Change of Address

Please alter my details on the mailing list for my free copy of *CentreLines*.

Name: Ms / Mr / Dr

Title:

Organisation:

Department:

Address:

Postcode:

Phone No:

Fax No:

Issues Required: ☐ NDARC ☐ NDRI ☐ Both