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centre lines

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issuing **forth**

Ketamine and GHB: new trends in club drug use?

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This will be the last issue of *CentreLines* with Professor Wayne Hall as the Executive Director of NDARC.

As many of you will be aware Professor Hall is leaving the alcohol and other drug field at the beginning of September to take up a new position as Director of the Office of Public Policy and Ethics at the Institute of Molecular Bioscience, University of Queensland. He will have Professorial appointments at the Institute of Molecular Bioscience and in the Department of Political Science where he will teach courses in social policy towards biotechnology.

Wayne has been at the Centre for over twelve years and is acknowledged internationally as one of the foremost experts on drug-related issues. He has helped to ensure that Australia is regarded at the forefront of research on substance use problems.

Professor Hall has made an important contribution to the field of alcohol and other drug research since his entry into the field in the early 1980s, particularly in our understanding of the harms associated with cannabis. Co-author of a series of highly influential documents on patterns and consequences of cannabis use – Professor Hall has attempted to provide a middle line, based on strict evidential standards in order to encourage rational debate. This work has had a major influence on policy, treatment and further research.

I'm sure that I speak for everyone at the Centre when I say that Wayne will be greatly missed, both on a personal and professional level. On a personal note, he has always supported me in my position at the Centre and also taught me a great deal. I wish him well in all his future endeavours.

Paul Dillon
Editor

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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.

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After twelve and a half years at the National Drug and Alcohol Research Centre (seven and a half as Executive Director) I leave in September to become Director of the Office of Public Policy and Ethics at the Institute of Molecular Bioscience, University of Queensland.

I leave with great reluctance because I have very much enjoyed my time at NDARC. I have been privileged to work on interesting issues with stimulating collaborators. Among the highlights have been: helping with the analysis of Ernest Hunter's research on alcohol use among Aboriginal people in the Kimberley; working with Jan Copeland and Wendy Swift on the special problems experienced by women with alcohol and drug problems; contributing to the development of the Opiate Treatment Index with Shane Darke, Nick Heather, Jeff Ward, and Alex Wodak; helping James Bell to assess the impact of methadone maintenance treatment on crime; working on the Quality Assurance Project treatment guidelines with Richard Mattick and his team; collaborating with Jeff Ward and Richard Mattick on two editions of our book on methadone maintenance treatment; collaborating with Neil Donnelly on the analysis of data on cannabis use; and working with Shane Darke and Joanne Ross on non-fatal opioid overdose.

The work of which I am proudest has been collaborative work that has initiated a program of research that has been pursued by others. Work with Julie Hando on patterns of amphetamine use grew into the Illicit Drug Reporting System conducted by Libby Topp and Shane Darke. The review of the health and psychological effects of cannabis (written with Nadia Solowij and Jim Lemon) prompted work on cannabis dependence that is being done by Jan Copeland and Wendy Swift. Work on opioid overdose deaths with Michael Lynskey and Louisa Degenhardt provided a good basis for estimating the number of dependent heroin users in Australia. The National Survey of Mental Health and Well-being which I helped to persuade the Commonwealth Government to fund has provided a valuable data set that is being thoroughly explored by Maree Teesson, Lucy Burns, Heather Proudfoot and Louisa Degenhardt.

I also take vicarious pride in the work of staff and students at NDARC. This includes: Nadia Solowij's doctoral work on the cognitive effects of chronic cannabis use; Kate Dolan's doctoral work on blood borne virus transmission in prison; the work of the other 14 doctoral students; the multi-centre trial of buprenorphine orchestrated by Richard Mattick and staff, many of whom went on to work with Richard on the National Evaluation of Pharmacotherapies for Opioid Dependence (Erol Diguisto, Chris Doran, Jo Kimber, Susannah O'Brien, Courtney Breen, and a host of NDARC staff and interstate collaborators); Jan Copeland and Wendy Swift's trials of treatment for cannabis dependence; Catherine Spooner's evaluation of the Ted Noffs' program; the various economic evaluations of treatment underway in the Centre; and the Australian Treatment Outcome Study: Heroin that is conducted by Maree Teesson, Shane Darke, Michael Lynskey, and Joanne Ross.

NDARC's research has been greatly facilitated by key technical and support staff. Paul Adamson has wrestled with the delights of maintaining a computer network for 50 staff. Neil Donnelly provided expert statistical advice. Eva Congreve, the Centre's indefatigable archivist, built a superb specialist research archive. Heli Wolk has kept the Centre in good financial health for all its life. Gail Pickering, Margaret Eagers and Julie Hodge have provided secretarial, administrative and clerical support and represented NDARC's public face. Paul Dillon has transformed the way that we deal with the media, giving the Centre a high public profile that has played an important a role in disseminating our research (and probably played a part in my new appointment).

A Centre of NDARC's size is not managed by one person. Richard Mattick has shouldered a large share of the administrative burden and he has made a very large contribution to the Centre's success by his leadership in treatment outcome research and his business acumen. I will find it difficult to reproduce our successful partnership in Queensland. We have both been well supported by Kevin Rozzoli, Chairman of our Board of Management, and the other Board members.

I have appreciated the support that the Centre has received from leading people in the drug and alcohol field, such as, Robert Ali, Steve Allsop, Margaret Hamilton, Graham Stratherne, Tim Stockwell, and Ian Webster. Clinicians' comments on our work has made it relevant to practice and treatment services have been generous in allowing us to interview their clients and to conduct clinical trials in their facilities. We have enjoyed outstanding support from colleagues in South East Sydney (James Bell and staff at the Langton Centre, Alex Wodak and staff at Rankin Court, Ingrid Van Beek and staff at Kirkton Road Centre), South Western Sydney (Ian Webster, Gilbert Witton, Sandra Sunjic and their staff), and Central Sydney (Kate Conigrave, Paul Haber, Deborah Zador and Danny O'Connor and staff), and the Pharmaceutical Services Unit in the Department of Health (John Lumby and staff). Some of our work would have been impossible without the assistance of specialist laboratory services provided by John Lewis and staff at Pacific Laboratory Medicine Services and Dr Johan Duflo and colleagues at the NSW Coroner's Court.

We have also had good support from interstate colleagues at NCETA and DASC in Adelaide, Turning Point in Melbourne, QADREC and ATODS in Brisbane, NCEPH and the AIC in Canberra, and NDRI and Next Step in Perth. I have enjoyed working with senior officials in the Commonwealth and State governments, especially Robert Ali, Roger Allnut, Michelle Capitaine, Keith Evans, Bruce Flaherty, Linda Gowing, Roger Hughes, Sue Kerr, Tony Kingdon, Kevin Larkin, Graham Stratherne, and Cheryl Wilson.

The list of people who have made my work easier and more pleasurable is already a long one; it could easily be made much longer except for the parsimony imposed by the 1000 word limit on *Headspace*. Those who have not been mentioned by name please accept my apologies.

I leave NDARC, as I had hoped, at a time of my choosing and in a way that enables the young researchers I have been fortunate to attract to the Centre make their mark. I look forward to looking back on what they have done in a decade from now. **cl**

Wayne Hall

Ketamine and GHB: new trends in club drug use?

Paul Dillon and Louisa Degenhardt

The use of ecstasy and other 'club drugs' appears to be increasing in many parts of the world. In Australia, general population surveys indicate an increase in those ever having tried ecstasy between the years 1995 and 1998: from 2.4% to 4.7% (Australian Institute of Health and Welfare, 1999).

To add to this, in recent years there have been several reports of an increase in the use and availability of other substances, such as ketamine and GHB (ABCI, 2000; McKetin et al, 2000). As new drugs are introduced it is important to be aware of these substances and the harms associated with their use.

Recently NDARC has conducted a number of studies looking at the club drug community and their patterns of drug use.

In 2000, for the first time, the Illicit Drug Reporting System (IDRS) included a two-year, three-state trial of the feasibility of monitoring emerging trends in the market for ecstasy and other club drugs. The three states involved were NSW, Queensland. In the first year of this trial, it was shown that although the market for ecstasy is different to the markets for other illicit drugs, the IDRS can successfully monitor this market.

In addition to the IDRS NDARC has also conducted smaller studies examining two of the newer drugs on the scene, in particular ketamine and GHB. Little is known about their patterns of use, both in Australia and overseas, and this research will hopefully assist in the development of harm reduction strategies.

So what do we know about ketamine and GHB? What are the risks involved when using these drugs and why are they becoming popular?

Ketamine

Ketamine, or 'Special K' as it is better known by club drug users, is a short-acting general anaesthetic for human and veterinary use. The drug was first manufactured in the United States in the 1960s and has been described as a 'dissociative anaesthetic' because of its ability to induce a lack of responsive awareness, not only to pain but also to the general environment.

In 1956 the Parke Davis Company synthesized phencyclidine (PCP). Although proving to be an effective anaesthetic, a major setback was the tendency for patients to experience severe problems during the recovery stage when the patient 'comes out' of the anaesthetised state, often referred to as the 'emergence' period. Problems included confusion, vivid dreams, hallucinations, and seizures (Seigel, 1978). Given the medical potential for the drug, Parke Davis attempted to develop a similar substance that did not produce the undesirable effects.

Ketamine is still used for short anaesthetic and surgical procedures especially in the absence of a trained anaesthetist. It is particularly useful in developing countries and remote country areas within Australia where a doctor may be working single-handed. Minimal anaesthetic equipment is required and the unconscious patient requires little attention for maintenance of the airway.

Ketamine has been described by some drug users as a 'horse tranquilliser', probably due to its link with veterinary medicine. Although it is used with horses, it is particularly useful as an anaesthetic for surgery involving cats and other small mammals.

Delgarno and Shewan (1996) argued that ketamine is not a 'dance drug', identifying it as 'totally inappropriate to use it as such'. The reasons for this include the rapid onset of the drug and the intensity of the experience as a whole. The respondents believed that using ketamine in a noisy, busy, or crowded environment was potentially dangerous and that use should be confined to a familiar and secure place, such as one's home. All users that had been interviewed for the study had been unprepared for the intensity and nature of the effects when they first used the drug (Delgarno & Shewan, 1996).

Users describe visits to the 'K-hole', a place referring to 'where users are' when under the influence of ketamine (Tori, 1996). The K-hole experience appears to be different for everybody but Stafford (1992) identified six categories of mental effects produced by ketamine, including contact with aliens, entry into computer networks, access into alternative realities and out-of-body-near-death states.

The effects of 75-100mg (about 10-20% of the anaesthetic dose) can produce an out-of-body experience (Jansen, 1997). Many who take large amounts of ketamine are convinced that their experiences were real even though they accept that they took a drug. They insist that a door into another world was opened by the drug. Some report that the perception of this 'other world' has developed into a paranoid psychosis (Jansen, 1997).

The real physical dangers do not appear to be associated with the drug itself as much as from the context of its use (Jansen, 1993). There are two reports of ketamine overdose in the literature. The first was described as 'a homicide for homosexual ends' (Licata et al, 1994) and the other describes a middle-aged woman who took the drug daily for seven months (Jansen, 2000).

For clubs and dance parties it has brought a range of new problems, with reports that ketamine used with alcohol can produce nausea and vomiting (New York State Office of Alcoholism and Substances Abuse Service, 1997). The greatest risk involved with the combined use of alcohol is that the user may collapse, fall asleep or simply be too exhausted to get up and then subsequently vomit. If the person's airways are not clear there is the possibility that they may choke on their own vomit (Jansen, 2000).

GHB

Gamma-hydroxybutyrate (GHB) or sodium oxybate is also known as GBH, 'grievous-bodily harm', 'fantasy', 'liquid ecstasy' or 'Liquid E'. The drug can come as either a crystal powder or, more usually as a clear, bitter or salty tasting liquid, usually sold in vials. It is also a neurochemical compound that occurs naturally in all cells of the human body.

GHB was originally synthesised in the 1960s. Since that time the drug has had many uses: for example, in some countries it is used as a general anaesthetic (Tolliver, 1997) and a treatment for insomnia (Chin et al, 1992) and narcolepsy (Tolliver, 1997). Research is also underway in some parts of the world where the drug is being trialled as a treatment for both alcohol and heroin withdrawal (Hernandez et al, 1998).

During the 1980s, GHB was widely available in the US, particularly in health food shops, where it was used by body-builders as weight control (Michael & Hall, 1994). In recent years it has gained popularity amongst club drug users due to its euphoric and aphrodisiac effects (ABCI, 2000).

The effects of GHB are usually felt within 15 minutes of taking the drug and rarely last longer than three hours. GHB is a disinhibitor and can produce a mild euphoria and a sense of well being, similar to that experienced when using Ecstasy (MDMA).

The effects of GHB appear to be highly dose-dependent (Galloway et al, 1997). Small increases in the amount taken lead to a dramatic increase in effect. Similar to alcohol, the drug affects co-ordination and speech and will almost always cause drowsiness, if not induce sleep. The most commonly reported side effects include abrupt drowsiness, dizziness and a 'high'. Other effects are headache, nausea, vomiting, myoclonic jerking and short-term coma (Chin et al, 1992).

All of these side effects are often much more severe when GHB is combined with other drugs, particularly depressants such as alcohol (Tolliver, 1997) and other psychoactive drugs (Kam & Yoong, 1998). People with a variety of conditions such as epilepsy and heart disease may be at particular risk of adverse side effects.

Deaths have been linked to the consumption of GHB products in the US (Food and Drug Administration, 1997; Centers for Disease Control, 1997), but there is a great deal of debate over whether the use of GHB alone can cause death. The majority of fatalities appear to have been caused by using the drug in association with alcohol (Tolliver, 1997) or other drugs (Ferrara et al, 1995).

Determining the correct dose and the quality are often the most dangerous aspect of GHB use (Galloway et al, 1997; Chin et al, 1992). The amount required for a level of effect depends on the person. Over-estimating the dose can have very serious consequences.

Kam and Yoong (1998) reported that almost total amnesia occurs after use which makes counselling and follow-up treatment difficult as it does not deter the patients who cannot remember their near-fatal experience.

Tolerance and physical dependence can also develop, as evidenced by a withdrawal syndrome that may include insomnia, muscular cramping, tremor and anxiety (Galloway et al, 1997).

In addition to its recreational use, as a result of its abrupt coma-inducing effects and its ease of administration (i.e. it can be added simply to drinks) it has been identified as a drug used in sexual assault, i.e. a 'date rape' drug (Centers for Disease Control, 1997). GHB can cause the victims to lose their ability to ward off attackers, develop amnesia, and thus become unreliable witnesses (ElSohly & Salamone, 1999). As the symptoms caused by this drug often mimic those of alcohol, not all victims are screened for their presence. **cl**

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project **notes**

COTSA: surveying the characteristics of clients in treatment for substance use problems

Fiona Shand and Richard Mattick

The 4th National Clients of Treatment Service Agencies (COTSA) census was conducted on Wednesday 2 May this year. The first census was in 1990, so trend data from the census will soon be available over an 11-year period. The data from the 2001 census is currently being processed and preliminary results will be available shortly.

The census gathers data on the demographic and substance use characteristics of clients in treatment for substance use problems. A high response rate (typically around 90%) provides good quality data that is used by the Commonwealth Department of Health and Aged Care in the evaluation and planning of the National Drug Strategy. When used in conjunction with statistics on prevalence, morbidity and mortality, the census can help to identify gaps in treatment services, changes in treatment patterns, and demographic changes amongst the treatment population.

Of interest in the current census will be changes in rates of treatment by substance, compared to previous censuses. The 1995 census showed an increase in the number of clients presenting with cannabis and amphetamine use problems, when compared with the 1992 and 1990 data, whilst there was a significant drop in the proportion of substance users presenting for treatment with an alcohol problem. Such changes can also be tracked against data on prevalence, attitudes, behaviour, morbidity, and mortality.

Because the census gathers data on a number of demographic factors, it is also possible to identify the characteristics of particular groups in treatment. For example, the 1995 census found that women were more likely to inject drugs than men, less likely to have presented with an alcohol or cannabis problem, but more likely to have presented with a an opiate or benzodiazapine problem. NESB users were younger than other users, more likely to have presented with an alcohol or volatile substance problem than other substance users, and less likely to have injected drugs in the past 12 months.

National Evaluation of Pharmacotherapies for Opioid Dependence: A review of the health economic methodology

Chris Doran

In 1998, the Commonwealth Government commissioned a National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD). This three-year project commenced in July 1998 and has been coordinated by the National Drug and Alcohol Research Centre (NDARC). NEPOD has involved collaboration by a large group of researchers and clinicians around Australia who have conducted studies on opioid pharmacotherapies. These studies have been undertaken in New South Wales, Victoria, South Australia, Queensland, the Australian Capital Territory, and Western Australia.

NEPOD includes 13 treatment outcome studies and other studies that have evaluated a range of opioid withdrawal and maintenance treatments involving methadone, naltrexone, buprenorphine, and LAAM, with associated psychosocial and medical interventions. This research program has involved total project funding of approximately $7 million, and more than 250 clinical and research staff who have provided treatment for (and have collected data from) more than 1,600 clients.

An important goal of the NEPOD project is the measurement of costs and cost-effectiveness of the trial treatments, with a view to informing governments about potential funding implications of the pharmacotherapies. To facilitate this purpose, an economic evaluation was undertaken to compare the different interventions being evaluated in terms of resource use and outcomes. To integrate the results of individual trials into a meaningful comparison of pharmacotherapies across treatment modalities a standardised health economic methodology was adopted. The standardised methodology was necessary to integrate trials of different duration, commencement and institutional settings.
To assist in this evaluation it was necessary to develop and implement uniform data collection instruments in addition to that collected as part of the NEPOD core data.

A brief overview of the health economic methodology is provided below.

- The major approaches to economic evaluation include cost minimisation, cost effectiveness, cost utility and cost benefit analysis. The appropriate method for the NEPOD evaluation is cost effectiveness analysis (CEA). CEA measures resource use in dollar terms and presents results in terms of a cost per additional unit of outcome achieved, allowing comparison of the efficiency of different interventions designed to produce a similar outcome.
- The perspective of the analysis was the health sector cost of providing the treatment and therefore included only the costs associated with service provision. Thus, the analysis does not incorporate out-of-pocket costs to individuals, or broader social costs such as costs of crime.
- To facilitate comparisons of interventions over time and across service providers a base year of 1998/99 was chosen and

resource use limited to the first six months of treatment (one to three months for withdrawal trials).

- In terms of identifying resources used in each trial, the health economic methodology incorporated resource use at both the patient and facility level. At the patient level, a "bottom-up" approach was used to identify resources used such as staff time, diagnostics and medications. A "top-down" approach was used at the facility level and includes an analysis of the infrastructure and support required to maintain and operate the facility or unit of interest. Such resource use includes supplies, consumables, capital and equipment together with general administration and overhead expenses. The integration of patient and facility costs then provides an estimate of total cost of treating a patient.
- The costing method undertaken is based on intention-to-treat, which implies that resources are costed for the duration of a patient's treatment.
- Two measures of effectiveness have been used in the NEPOD health economic methodology. The first measure of effectiveness is derived using data collected from the "Opiate Treatment Index" (OTI). The OTI identifies the number of days in a month that a patient is free from heroin. Comparing the number of heroin-free days (HFD) reported in the six-months to those reported at baseline provides a measure of additional HFDs gained per month. The second measure of effectiveness is relevant only to withdrawal trials and is based on whether the patient is abstinent from heroin for one week. Thus, results are presented in terms of cost per additional HFD per month, and cost per additional patient abstinent at one week.
- Economic costs and treatment outcomes are compared and expressed as a cost effectiveness ratio. This ratio provides an indication of cost per successful treatment outcome and the treatment with the lowest ratio is considered the most cost effective.

Evaluation of criteria for the diagnosis of cannabis use disorders

Maree Teesson, Michael Lynskey, Barry Manor and Andrew Baillie

Cannabis is the most widely used illicit drug in developed countries, and has a significant impact on mental and physical health in the general population. However, the validity of common diagnostic schemes and their applicability to cannabis use disorders is poorly understood. This investigation set out to explore the psychometric properties of the widely accepted DSM-IV criteria for cannabis abuse and dependence (American Psychiatric Association, 1994). In this scheme, seven criteria for dependence and four for abuse are applied equally to all classes of psychoactive substance (e.g. alcohol, stimulants, opiates, cannabis, etc.). Although they have been considerably refined over the last few decades, the criteria are still based principally on clinical observations.

One way to explore the validity of these criteria is to model them mathematically, and examine the underlying factor structure within a large general population dataset. For example, an investigation of alcohol use disorders showed that a two-factor model fits well with US population data, and that the dimensions of this model correspond approximately to the DSM constructs of abuse and dependence.

According to DSM-IV, two separate theoretical models of cannabis abuse and dependence criteria may be proposed. The first assumes that all eleven criteria combined are reflections of a single underlying factor, representing an individual's vulnerability to cannabis use disorders. The second, a two-factor model, assumes separate, albeit correlated, factors representing cannabis abuse and dependence.

Data from cannabis users (n = 722) were obtained from a cross-sectional study of a large and representative sample of the Australian general population (National Survey of Mental Health and Wellbeing, 1997). The DSM-IV criteria for cannabis abuse and dependence were assessed using the CIDI-AUTO instrument. Patterns of criterion endorsement were analysed using a special technique developed for dichotomous (e.g. yes or no) variables. Confirmatory factor analysis was undertaken on tetrachoric correlation matrices, which map the dichotomous variables onto a continuous underlying ("latent") variable.

Approximately one in twelve Australians (7.1%) were found to have used cannabis more than five times in the past twelve months and 56.5% responded positively to at least one of the DSM-IV abuse or dependence criteria for cannabis use disorders. Within the adult population, 2.2% met criteria for a cannabis use disorder (0.7% abuse and 1.5% dependence).

Both a one factor and two-factor model for cannabis use disorders fitted adequately to the data. However, in the two-factor model, the estimated correlation between the abuse and dependence factors was extremely high (.99). The one-factor model therefore provided the most parsimonious model of the cannabis use disorder criteria, and the majority of the DSM-IV criteria showed acceptable reliability/validity and discriminate adequately between diagnoses of abuse and dependence.

In contrast, two criteria (legal problems associated with cannabis use, and use in hazardous situations such as driving) were characterised by both low reliability/ validity and low discriminatory power. The inclusion of these criteria in future revisions of the DSM scheme may need to be reconsidered. **cl**

abstracts

Patterns of use and harms associated with non-medical ketamine use

Technical Report No 111

Paul Dillon, Jan Copeland and Karl Jansen

This study interviewed 100 people who had ever used ketamine for non-medical reasons. Four topics were addressed: (1) what are the characteristics of the people who use ketamine?; (2) what motivates people to use ketamine?; (3) how is ketamine being used?; and, (4) what are the consequences of using ketamine? Specifically the aims of this project were 1) to identify current patterns of illicit ketamine use; 2) to identify potential harms associated with illicit ketamine use; and 3) to determine the need for interventions and identify appropriate harm reduction strategies for illicit ketamine users in particular community subgroups.

The ketamine users in this sample are a unique sub-group of the illicit drug using population in Australia. They appear to be a part of the growing 'party drug' culture in Australia with almost three quarters (73%) of them usually using the drug either at a rave/dance party or a club. Ecstasy and speed are among the most widely used drugs of this population. However, when compared with a previous study of ecstasy users, ketamine users differ in demographic profile and injecting behaviour. In common with other illicit drug users, however, in addition to the reasons for their drug use, they experience a range of negative health and psychological effects of their ketamine use.

In this sample of ketamine users, ketamine appeared to be a drug that had been added to an already extensive drug use repertoire. The three drugs reported as most widely used with ketamine were most closely linked to the party drug scene – ecstasy (ever used with ketamine by 71% of the sample), MDA (62%) and amphetamines (50%). This was supported by the sample's choice of drugs preferred to use with ketamine, once again ecstasy (74%) and MDA (37%) were the top choices.

Compared to a sample of regular ecstasy users surveyed in 1997, this sample of ketamine users was more likely to be older, male, in full-time employment and living in the inner city. They were a well-educated group of people, many of whom had high incomes.

Many ketamine users had had only a limited use history. Despite this, many had experienced negative side effects, which had meant they had either reduced their dose or stopped use. Nevertheless, significant proportions of this

sample reported that their reasons for use related to side effects that might place them at risk of physical injury. Many of the sample reported having injected ketamine at some time, as well as a variety of other drugs. Many of the sample had injected drugs, and while the survey reveals that they were not necessarily placing themselves at risk of HIV infection, they may be susceptible to other blood borne viruses such as Hepatitis C, as well as other injecting risks, such as vein damage.

Efforts to develop harm minimisation messages for this group will need to take into consideration the possibility that a large proportion of the group are well-educated and well-informed in their approach to drug use. This appears to be a risk-taking sample and any efforts to warn users or potential users of the negative side effects of this drug may simply promote future use of ketamine by persons who find these 'negative' side effects desirable.

Cannabis use and dependence among Australian adults: results from the National Survey of Mental Health and Wellbeing

Addiction, 96, 737-748

Wendy Swift, Wayne Hall and Maree Teesson

Aims. To examine: (i) the prevalence of cannabis use and DSM-IV cannabis dependence among Australian adults, and (ii) correlates of levels of cannabis involvement.
Design. Cross-sectional survey assessing substance use and DSM-IV substance use disorders (abuse and dependence).
Settings and participants. A household survey of a nationally representative sample of 10 641 Australians aged 18 years and older.
Measurements. Trained interviewers administered a structured, modified version of the Composite International Diagnostic Interview (CIDI).
Findings: In the past 12 months, 2.2% (95%CI:1.8, 2.6) of adults were diagnosed with DSM-IV cannabis use disorder, comprising cannabis dependence (1.5%; 95%CI:1.2,1.8) and cannabis abuse (0.7%; 95%CI:0.6, 0.8). Almost one-third of cannabis users (31.7%; 95%CI:27.7, 35.7) met criteria for cannabis dependence (21%; 95%CI:16.7, 25.3) and abuse (10.7%; 95%CI: 8.0, 13.4). Multinominal logistic regression revealed that compared to non-dependent cannabis users, non-users were more likely to be female, aged 25+ years, out of the labour force and married/de facto, and displayed lower levels of co-morbidity. In contrast, dependent cannabis users were more likely to be 18-24 years old, unemployed, and displayed higher levels of co-morbidity than non-dependent users.
Conclusions: Cannabis use disorders affect approximately 300 000 Australian adults. A better understanding of the factors associated with cannabis dependence may help identify groups who have difficulties controlling use and aid the development of strategies for reducing cannabis-related harm.

Ketamine and GHB: new trends in club drug use?

Journal of Substance Use, 6, 11-15

Paul Dillon and Louisa Degenhardt

Around the world the use of ecstasy and other party drugs appears to be increasing. LSD, amphetamines and cocaine, together with ecstasy and its derivatives, have been a part of the Australian dance party/nightclub scene for some time. In recent years, drugs such as ketamine ('Special K') and gammahydroxybutyrate (GHB) have also begun to become popular with some sections of the dance community. Ketamine was developed as a short-acting general anaesthetic for human and veterinary use. Little is known about the illicit use of the drug but a study examining 100 illicit ketamine users found they may experience temporary paralysis, confusion and lack of awareness of time. GHB first appeared in Australian in 1996 when a number of patrons collapsed outside a nightclub after taking what was then called 'fantasy'. The street name of the drug has changed many times since, to names such as 'liquid ecstasy' and 'liquid E'. Over 200 people overdosed on GHB in a two-month period in 1997, and GHB has caused significant problems for venues and dance party promoters. This paper examines the history of these drugs and their effects. The authors also suggest some possible harm reduction messages for GHB and ketamine users.

Clinical profile of participants in a brief intervention program for cannabis use disorder

Journal of Substance Abuse Treatment, 20, 45-52

Jan Copeland, Wendy Swift and Vaughan Rees

The increasing demand for cannabis dependence treatment has led to the identification of significant gaps in the knowledge of effective interventions. A randomized controlled trial of brief cognitive-behavioural interventions (CBT) for cannabis dependence was undertaken to address this issue. A total of 229 participants were assessed and allocated to either a 6-session CBT program, a single-session brief intervention, or a delayed-treatment control group. This paper demonstrates that individuals with a cannabis use disorder will present for a brief intervention program. While they report similar patterns of cannabis use to nontreatment samples, they report a range of serious health and psychological consequences. While they appear relatively socially stable, they typically demonstrated severe cannabis dependence and significantly elevated levels of psychological distress, with the most commonly cited reason for cannabis use being stress relief. There were clinically relevant gender differences among the sample. This study provides more evidence of the demand for, and nature of issues relevant to, interventions for cannabis use disorders, and supports the need for further research into how best to assist individuals with these disorders.

Differential uptake of a smoking cessation programme disseminated to doctors and midwives in antenatal clinics

Addiction, 96, 495-506

Margaret Cooke, Richard Mattick and Raoul Walsh

Aims. Two methods of dissemination (simple and intensive) were used to disseminate a smoking cessation programme to doctors and midwives working in antenatal clinics. This paper describes the differential uptake of the smoking cessation programme by doctors and midwives. It investigates whether the number of smoking cessation interventions used differ due to the type of dissemination. It also examines the frequency with which doctors and midwives provide smoking cessation interventions after dissemination.
Design. Clinics were randomised to the method of dissemination (simple or intensive). Pre-post test design was used to examine the relationship between dissemination method and professional status at baseline and follow-up. A baseline survey collected data on the use of smoking cessation intervention in the clinics prior to dissemination. A follow-up survey was conducted 18 months after the dissemination.
Settings. Twenty-three public hospital antenatal clinics in NSW.
Participants. All clinical staff (midwives and doctors) working in the clinic during the 1-2 week survey period prior to dissemination and 18 months after the dissemination were asked to participate. The response rate was 63% (223) at baseline and 64% (182) at follow-up. Only 48% of midwives and doctors at follow-up were working in the original clinic.
Measures. The proportion of clinicians who initially adopted the programme; the proportion of clinicians who had one or more programme components in the last week; the number of types of smoking cessation intervention provided (maximum=13), and the estimated proportion of clients offered smoking cessation intervention.
Findings: More midwives than doctors 'ever used' the programme (76% vs. 25%) and continued to implement (58% vs. 22%) the programme 18 months after dissemination. Both midwives and doctors increased the number of types of smoking cessation intervention offered at follow-up compared to baseline (mean difference 2.8). Midwives provided more smoking cessation interventions than doctors at baseline (mean difference 0.9) and at follow-up (1.6), regardless of method used to disseminate the programme. Midwives' mean estimates of the proportion of clients offered interventions were greater than doctors' (midwives' 59% vs. doctors' 35%) at follow-up.
Conclusions: The dissemination of a smoking cessation programme increased the level of smoking cessation interventions used by doctors and midwives. Doctors and midwives differ in their uptake of smoking cessation programmes. This information can be used to plan programme dissemination strategies in the future. **cl**

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

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