

Deakin University Violence Prevention Group

Submission on inquiry into crystal methamphetamine (ice)

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2. The Deakin University Violence Prevention Group

The Violence Prevention Group at Deakin University works to prevent violence across the lifespan through its program of applied research that provides the basis for developing evidence-based policy, treatment and practice in Australia. The group has expertise in key areas of violence prevention, including preventing street violence (especially substance-related violence), and the rehabilitation of violent and substance using offenders, community responses to domestic and family violence, and violence in the workplace. We conduct research using a very wide and creative range of methodologies, including observational work in nightclubs, longitudinal research investigating the developmental drivers of violence, treatment design and evaluation with offenders, surveys of prisoners, street intercept surveys, and a comprehensive program of research using official statistics (such as police and hospital data) to provide bottom line evaluations of what works. Flagship projects include three of the largest studies ever conducted in nightclubs globally:

1. Dealing with Alcohol-related problems and the Night Time Economy (DANTE; <http://www.deakin.edu.au/psychology/psychology-research/dante>)
2. Patron Offending and Intoxication in Night-time Entertainment Districts (POINTED; <http://www.deakin.edu.au/psychology/psychology-research/pointed>) and,
3. Drug and Alcohol Intoxication and Subsequent Harm in Night-Time Entertainment Districts (DASHED; <https://www.deakin.edu.au/psychology/dashed>).

In addition, we have also recently submitted the final report to the National Drug Law Enforcement Research Fund a national study into the role of Alcohol and Drug Involvement in family and Domestic Violence in Australia (ADIVA). Our group also has extensive

experience studying youth development and policing and community approaches to the management of known sexual offenders in the community.

The Centre brings together the expertise of a large group of researchers, led by Professor Peter Miller.

Prof Peter Miller has conducted extensive research around: Alcohol-related violence in licensed venues; the longitudinal/developmental predictors of violence (including family and domestic violence), and; the behaviour of vested interests, especially the alcohol industry. He has an extensive media profile and has played a major role in the ABC documentary, *Dead Drunk: Lights out in the Cross*.

The Deakin University Violence Prevention Group has a strong applied focus, especially in regard to policy, practice and evaluation. Underpinning these interests is a set of core values about professional practice. These relate to a commitment to evidence based practice, a belief in building on individual strengths, and in working in ways that promote personal autonomy and dignity. The research interests of the group are thus compatible with the emphasis on professionally relevant teaching and research in psychology at Deakin University.

3. Introduction

Thank you for the opportunity to provide a response to the consultation on the parliamentary inquiry into crystal methamphetamine (ice). We welcome the action to address this important issue.

In 2013/2014, the Drug Use Monitoring in Australia (DUMA) program found that 73% of police detainees across Australia produced a positive urinalysis to drugs, and 37% of positive tests were for amphetamines (34% of which was methamphetamine; Coghlan et al., 2015). Almost half of the sample (45%) attributed their offending to the use of drugs or alcohol. It is clear that the use of methamphetamine has a role to play in offending behaviour, meaning that a health problem, i.e. addiction, is now becoming a costly justice issue. In Victoria alone in 2015, the cost of having one person in prison per day was \$297.34 (Corrections Victoria, 2015). Whilst most prisoners have access to substance-related

treatment programs, recidivism rates are still high (almost 50%), further exacerbating the revolving door of the justice system in Australia, and reiterating the importance of reducing both substance use, and offending behaviour. This is of particular relevance given that studies have found probationers with histories of, or current drug use were between 30 and 60% more likely to engage in new crime than those who do not have a drug use history (De Li, Priu, & MacKenzie, 2000; Olson & Lurigio, 2000).

4. Short and long-term harms of crystal methamphetamine use

Crystal methamphetamine (CM) has many effects on the central nervous system, particularly the brain. While using, a person will experience euphoria, increased energy levels and alertness, increased physical and mental capacity, an increase in productivity (Cretzmeyer et al 2003; Hart et al. 2001), and often elevated self-esteem and increase in libido (Cobb Scott et al. 2007). For those who use continuously on a binge, the increased amounts of CM required to maintain the high can lead to heightened anxiety, paranoia, hallucinations, and even delirium (Harris & Batki, 2000; Smith & Fischer, 1970). McKetin et al (2014) reported that when a person was using methamphetamine, they were 6.2 times more likely to engage in violent behaviour, compared to when they were not using, and that this violence was typically independent of psychotic symptoms, suggesting a causal relationship. Further, long term use can lead to psychosis, particularly for those who become dependent on injecting CM (McKetin et al. 2006), as well as violent behaviour (Baskin-Sommers & Sommers, 2006).

CM has its effect on the CNS through neurotransmitters. Neurotransmitters are chemicals that are stored in the communicating cells in the CNS (including the brain), and are responsible for communicating neural signals from one cell to another, and so they underlie all types of behaviour (e.g., perception, learning and aggressive antisocial behaviour). Immediately after using CM, a substantial amount of one of these neurotransmitters- dopamine- is released, as well as two other neurotransmitters- norepinephrine and serotonin (Kokoshka et al. 1998). High levels of CM, and long-term use can result in a reduction of dopamine and dopamine nerve terminals (Harvey et al. 2000; Wagner et al. 1980), and can reduce the density of serotonin transporters in the brain (Sekine et al., 2006). Sekine et al., (2006) found that low density of serotonin receptors was associated

with elevated levels of aggression, even in those who were currently abstinent from CM. In fact, a review of the role of neurotransmitters in aggressive behaviour found that serotonin has both an inhibitory and stimulating effect on aggression, and dopamine is associated with reward seeking behaviour which can lead to aggression, and can enhance aggression (Narvaes & Martins de Almeida, 2014).

Global neurological impairment has also been demonstrated in approximately 40% of persons with methamphetamine (MA) dependence (Rippeth et al. 2004). Importantly, episodic memory, executive function- including response inhibition (i.e., choosing not to participate in a potentially rewarding, highly tempting activity, even if there are compelling reasons to do so; Feldstein Ewing, Houck, & Bryan, 2015) and novel problem solving, impulsivity, complex information processing speed (i.e. not being able to store all incoming information in working memory long enough to process it), and psychomotor functions (i.e. movement, coordination, strength) are negatively impacted through the use of MA. Further investigation revealed that it appears to be learning impairments that are the episodic memory concern, rather than retention of information. As the name suggests, episodic memory relates to memory for autobiographical events or experiences that occurred at a particular place or time (e.g., past personal experiences/episodes). MA users who will likely have damaged episodic memory due to use, are likely to forget past actions and associated consequences and may end up repeating them (Rusyniak, 2013). As a result of their impaired executive function, CM users might be distractible, act socially inappropriately, and lack goals (Rusyniak, 2013). Issues have also been identified with attention/working memory, language and visuoconstruction (Cobb Scott et al., 2007). In addition, one form of impulsivity that is often present in substance users and offenders is known as temporal discounting- whereby the consequence of an action receives less importance as it will occur sometime in the future (Arantes, Berg, Lawlow, & Grace, 2013; Hanock, Rolison, & Gummerum, 2013).

MA dependent individuals engage in risky decision-making and are highly impulsive, as evidenced by their preference for immediate small rewards, over delayed larger rewards (Hoffman et al. 2006; Monterosso et al. 2005). They also tend to make disadvantageous and/or impulsive choices, when compared to normal comparison participants (Gonzalez et al. 2007), and self-report of impulsive behavior patterns (Semple et al. 2005). To try to

reduce impulsivity and their wish for immediate rewards, MA users must use their higher cognitive control systems, which is difficult given the damage to their executive system (Rusyniak, 2013).

5. Why education campaigns won't work

Importantly, given what we know about the impact of CM on the central nervous system particularly the brain, we must respond in ways that are going to be effective for the target population. Education and advertising campaigns will likely not be effective for drug users for a variety of reasons, including but not limited to the changes in their brain that occur as a result of using CM, and as such their ability to respond to education. As CM users are likely to experience issues with paying attention for long periods of time, have difficulties with learning new information, and have difficulties with consequential thinking, whereby they can weigh up the costs and benefits of engaging in a particular behaviour, they are unlikely to respond to any advertising or education campaigns.

Not only are education campaigns unlikely to work for those already using, but they are also unlikely to work in a preventive capacity. There are particular examples where education around MA use has shown no effect, or in fact an increase in drug use after the campaign.

For example, from 1999-2004, a National Youth Anti-Drug campaign was implemented in the US, which disseminated an average of 2.5 antidrug messages per week through multiple outlets (television (local, cable, and network), radio, web sites, magazines and movie theaters). Hornik et al. (2008) examined the cognitive and behavioural effects of the campaign on youths aged between 12.5 and 18 years. They found that there was no impact on the prevalence of marijuana use, and in fact found there was a boomerang effect, whereby greater exposure to advertising predicted less intention to avoid marijuana use. Boomerang effects have been found on many occasions when strategic health messages intended to have a positive effect have instead brought about increases in the behaviours they sought to reduce (Byrne, Linz, & Potter, 2009), including smoking (Grandpre et al., 2003), alcohol consumption (Gordon & Minor, 1992; Ringhold, 2002) and drug use (Fishbein et al., 1992; Rosenbaum & Hanson, 1998).

Further, in the US in 2005 a program known as “The Montana Meth Project” was implemented in an attempt to deter teenagers from using MA. It included a series of graphic advertisements portraying methamphetamine users as unhygienic, dangerous, untrustworthy, and exploitive. Teenagers in Montana were exposed to the advertisements three-five times a week. In his review of the Montana Meth Project, Erceg-Hurn (2008) reported that it had been associated with increased acceptability of MA use, and a decreased perceived danger of using drugs, and he discouraged further rolling out such programs as inadvisable. Anderson (2010) also found that the Montana Meth Project was ineffective, demonstrating no impact on MA use.

6. Swift, Certain, and Fair Justice

An evidence-based option that has only recently begun to be explored in an Australian context for methamphetamine users is the HOPE (Hawaii Opportunity Probation with Enforcement) program. The HOPE program (based on the principles of swift, certain and fair justice) was recommended to be further investigated in the initial inquiry into crystal methamphetamine, as well as the Royal Commission for Family Violence, and an adaptation is currently being trialled in the Northern territory, known as Compliance Management or Incarceration in the Northern Territory (COMMIT).

The HOPE program was developed by Judge Steven Alm, a circuit court judge in Hawaii, because although probation officers were using motivational interviewing, the risk-needs-responsivity model, and cognitive behavioural therapy, he was still seeing the same repeat offenders in his courtroom (Alm, 2016). HOPE is a community supervision strategy for substance-abusing probationers that began as a pilot program in October 2004 and has expanded to more than 2200 participants. In January 2015 there were 21 states in the US who had implemented an adaptation of the program, involving swift and certain sanctions (Bartels, 2015). It is a sentencing option for substance using offenders, which incorporates mandatory sobriety from drugs. If abstinence is not maintained, there are swift, certain and proportionate (fair) sanctions. Whilst it was initially developed for offenders on probation, it can be adapted to fit within an Australian criminal justice context in that it could be applied to divert offenders away from the prison system, for those on bail, or for those on parole.

The initial evaluation of HOPE (conducted three years after its inception) found that participants, as opposed to those on probation as usual, were:

- **Seventy-two percent less likely to use drugs.**
- **Fifty-five percent less likely to be arrested for a new crime.**
- **Sixty-one percent less likely to skip appointments with their supervisory officer.**
- **Fifty-three percent less likely to have their probation revoked.**

Source: <http://www.nij.gov/topics/corrections/community/drug-offenders/pages/hawaii-hope.aspx>

At the ten-year follow-up point, which was seven years after the initial evaluation, the HOPE group had significantly fewer new criminal charges (22% less), and were 50% less likely to return to prison than the control group (Hawken et al., 2016).

Being involved in the HOPE program requires some effort from participants, and an initial outlay of government resources. On intake into the program participants attend an induction meeting/hearing where the conditions of the program are thoroughly explained along with the anticipated sanctions should participants violate one or more conditions. It is made clear at the outset that sanctions will be applied in both a swift and certain manner (without discretion). Each participant is allocated a colour and instructed that they must call the HOPE hotline each morning to learn the chosen colour of the day. If their assigned colour is stated they must attend their probation office before 2pm that day for a drug test. During the first two months of the program participants are randomly tested once a week, though good behaviour through compliance and negative drug tests means they are able to receive a new colour which is associated with less regular testing. If the participant returns a positive drug test or fails to appear for testing, a warrant to appear in court is immediately issued. They are brought before the judge within 72 hours. If the person has violated the HOPE conditions they are immediately sentenced to a short jail stay (usually several days, with credit given for time served). Importantly, throughout this process the judge and probation officers encourage participants to make positive changes and remind them that they want them to succeed. Further, program participants can request substance use treatment if they feel they require it, or if they fail several drug tests they can be mandated to attend treatment.

A common criticism levelled against the HOPE program is that it is a sanctions-only model, which is based on deterrence theory- a theory which has been shown over many years to be ineffective at changing behaviour. However, this is not an accurate perception. Sanctions are used in the HOPE program to move participants from a position where they are externally motivated to change, to one where they develop their own internal motivation to change. The role of judges, probation/parole officers and treatment providers is crucial in this process and to the overall success of the program, because research has established that strong therapeutic alliance can have positive impacts on treatment outcomes (Alm, 2016; Horvath & Symonds, 1991; Marshall & Serran, 2004; Martin, Grasse, & Davis, 2000; Ross, Polaschek, & Ward, 2008). Further, a key strength of HOPE is that it is often used alongside evidence-based programs- that is, participants can still access programs they require such as substance related programs or sex offender programs, and the supervision team works to ensure that the participants receive the most appropriate treatment (i.e. Residential rehab, detox, interfamilial sexual offending, etc.; Alm, 2016). Another key strength is the use of a behavioural triage model. The model posits that some people will be able to stop using drugs on their own, and won't require extra treatment services. Not only does this save treatment resources, but it also removes participant denial of drug use, as it is only if they consistently fail drug tests that they will be mandated to attend treatment.

Providing swift consequences for unwanted behaviour means that temporal discounting is reduced in participants. Whilst the consequence is not as immediate as the gratification attained from drug use, it is much closer in time to what is usually experienced. Further, executive function deficits frequently present in substance users and offenders mean they have difficulty anticipating consequences, weighing up punishment and reward, and determining what an appropriate behaviour is in a challenging situation. As such, they may have trouble linking current behaviour with future consequences. This is rectified by SCFJ style programs (like HOPE) which provide a consequence every time the unwanted behaviour is performed, and in a swift manner, so that the offender is able to learn the connection between behaviour and consequence. This learning is enhanced by all the rules of the program being outlined very clearly at the outset, and the strict enforcement of these rules throughout the course of the program.

With a growing prison population in Australia, as well as an increase in those people seeking treatment for methamphetamine use in prisons, it is important that this issue is addressed. Swift, certain, and fair justice programs provide the opportunity for those who use crystal methamphetamine to take responsibility for their drug use, and demonstrate they are capable of managing their substance use problem in the community. Not only will this result in a reduction of resources expended placing crystal methamphetamine using offenders in prison, but it also allows people to maintain employment, housing, and their support network, which evidence shows increases the likelihood of maintaining a drug-free and crime-free lifestyle.

7. References

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