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Research paper

Analysing pseudoephedrine/methamphetamine policy options in Australia using multi-criteria decision modelling

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ABSTRACT

Background: In this paper we capture and synthesize the unique knowledge of experts so that choices regarding policy measures to address methamphetamine consumption and dependency in Australia can be strengthened. We examine perceptions of the: (1) influence of underlying factors that impact on the methamphetamine problem; (2) importance of various models of intervention that have the potential to affect the success of policies; and (3) efficacy of alternative pseudoephedrine policy options.
Methods: We adopt a multi-criteria decision model to unpack factors that affect decisions made by experts and examine potential variations on weight/preference among groups. Seventy experts from five groups (i.e. academia (18.6%), government and policy (27.1%), health (18.6%), pharmaceutical (17.1%) and police (18.6%)) in Australia participated in the survey.
Results: Social characteristics are considered the most important underlying factor, prevention the most effective strategy and Project STOP the most preferred policy option with respect to reducing methamphetamine consumption and dependency in Australia. One-way repeated ANOVAs indicate a statistically significant difference with regards to the influence of underlying factors ($F(2.3, 144.5) = 11.256$, $p < .001$), effectiveness of interventions ($F(2.4, 153.1) = 28.738$, $p < .001$) and policy options ($F(2.8, 175.5) = 70.854$, $p < .001$).
Conclusion: A majority of respondents believed that genetic, biological, emotional, cognitive and social factors are the most influential explanatory variables in terms of methamphetamine consumption and dependency. Most experts support the use of preventative mechanisms to inhibit drug initiation and delayed drug uptake. Compared to other policies, Project STOP (which aims to disrupt the initial diversion of pseudoephedrine) appears to be a more preferable preventative mechanism to control the production and subsequent sale and use of methamphetamine. This regulatory civil law lever engages third parties in controlling drug-related crime. The literature supports third-party partnerships as it engages experts who have knowledge and expertise with respect to prevention and harm minimization.
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Introduction

Illicit methamphetamine consumption and dependency is a growing problem in Australia, as indicated by recent increases in the prevalence of use, number and purity of seizures, and border and clandestine laboratory detections (Australian Government, 2013, 2014). Nathan, Bethmont, Rawstorne, Ferry, and Hayen (2016) highlight an upward trend in the reporting of methamphetamine as the drug of greatest concern-up from 10.8 percent in 2009 to 48.4 percent in 2014 (relative risk [RR] per year, 1.37; 95% CI, 1.27–1.47). There has also been an upward trend in self-reported methamphetamine use when a user is admitted to residential rehabilitation treatment-up from 28.8 percent in 2009 to 59.4 percent in 2014 (RR per year, 1.15; 95% CI, 1.09–1.22). Degenhardt et al. (2016) estimate that in 2013–14 there was an increasing rate of methamphetamine regular use and dependence among the Australian population aged 15–54. The estimated rate of regular users increased from 0.74 percent in 2009–10 to 2.09 percent in 2013–14 (i.e. 268,000 regular methamphetamine users (95% CI, 187,000–385,000)). For dependent users, the rate increased from 0.47 percent in 2009–10 to 1.24 percent in 2013–14 (i.e. 160,000 dependent users (95% CI, 110,000–232,000)). The

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prevalence of use in Australia is amongst the highest in the world with recent reports suggesting that associated harms are also increasing (Lloyd, 2013), characterized by escalating emergency department admissions and ambulance attendances (Adams, Sandy, Smith, & Triglone, 2008).

The main policy response to this problem has been through law enforcement (e.g. police crackdowns) (Mazerolle, Soole, & Rombouts, 2006; Ritter, McLeod, & Shanahan, 2013), while prevention (e.g. education and pro-social behaviour programs), harm reduction (e.g. safe injecting facilities), and treatment (e.g. withdrawal programs) (Ritter & McDonald, 2008) have been less emphasised. For example, in 2009/10, 64.1 percent of the total federal and state government expenditure on illicit drug responses was allocated to law enforcement, followed by 22.5 percent on treatment, 9.7 percent on prevention, and 2.2 percent on harm reduction (Ritter et al., 2013).

The dominance of law enforcement in illicit drug policy is largely explained by political agendas (Edwards & Sheptycki, 2009; Stockdale & Whitehead, 2003), which have produced campaigns such as the 'war on drugs' led by the United States and adopted in Australia (Bull, 2013). Evidence-based alternatives, such as treatment and harm reduction, are overlooked in favour of those with public and political support, such as punishment and enforcement (Moore, Ritter, & Caulkins, 2005).

A three-lens approach (Head, 2008), which synthesises research, political and practice-based knowledge, could help develop evidence-based policy that also meets the needs of policymakers and practitioners. But incorporating political and practitioner knowledge into policy is complex given diversity in their views. To overcome this difficulty, this study follows on from the work of Manning, Ransley, Smith, Mazerolle, and Cook (2013) in developing and applying a method to synthesize views of diverse groups of experts on the salient characteristics of methamphetamine policy-making in Australia. Our aim is to provide an approach that systematically analyses, compares and incorporates the views and opinions of experts in various domains so that pseudoephedrine supply control policies can be strengthened. Moving on from a small pilot study using data only from the state of Queensland (see Manning, Ransley, et al., 2013), this national study address four research questions using a stratified random sample of key experts from government (e.g. policy, police), non-government (e.g. drug outreach centres), health (e.g. pharmacists and health practitioners), and academia (e.g. researching and publishing in the area of health and criminology). The questions addressed are:

1. Which pseudoephedrine policy alternative do experts believe has the most potential to address the consumption and dependency of methamphetamine in Australia?
2. How do experts rate the underlying key factors that influence methamphetamine consumption and dependency?
3. How do experts rank interventions that may assist in reducing methamphetamine consumption and dependency?
4. To what extent is there agreement between expert groups with regard to the ranking of competing policy alternatives, factors that underpin consumption and dependency, and interventions that may assist in reducing the problem?

Policy responses to methamphetamine consumption and dependency in Australia

Illicit methamphetamine in Australia is predominantly produced domestically (Australian Government, 2013) using precursor chemicals, such as pseudoephedrine, an active ingredient in cold and flu medications obtained by diversion of legal pharmaceuticals from community pharmacies by organized pseudo-runs (also known as smurfing) (Cherney, O'Reilly, & Grabosky, 2006).

At both federal and state levels, significant changes have been made to legislation to address the problem of precursor diversion into illicit methamphetamine production. For instance, in 2006, all pseudoephedrine-based products were rescheduled to 'pharmacist only medication' meaning they would no longer be freely available 'across the counter'. Stricter state-based regulations were introduced around pseudoephedrine storage, handling, dispensing and sales, in addition to an increase in the penalties delivered for engaging or attempting to engage in precursor diversion (Australian Government, 2007).

Pharmacists must now monitor and adhere to comprehensive rules surrounding the types of products stocked, how and where these are displayed, who can purchase these products, what types of information are recorded for each sale, and what labelling or warnings the products must display (Ransley et al., 2011). To assist pharmacists with this increased compliance burden, a real-time online recording system (Project STOP) was developed and its use is now mandated in Queensland and some other states and territories in Australia (Devaney, Ferris, & Mazerolle, 2015). It provides pharmacists with a platform to record the sales information of pseudoephedrine-based products, and allows those who use the system to view customer's recent purchase history from other same-state pharmacies. Pharmacists are given the tools to make informed decisions about whether to proceed with, or raise attention to, suspicious sales and to also keep check of whether they are meeting statutory requirements.

Project STOP is intended to operate as a preventive law enforcement mechanism, by disrupting the initial diversion of pseudoephedrine from pharmacies. Data regarding denied or suspect sales is passed onto the police. The mandated use of this mechanism uses regulatory or civil law levers to engage third parties (e.g. pharmacists) in controlling drug-related crime and is referred to as third party policing (Mazerolle & Ransley, 2006). In instances where these parties (i.e. pharmacists) do not comply with requirements of the scheme, they are at risk of facing disciplinary or legal sanctions.

Any evaluation of drug policy needs to look beyond its impact on drug availability (which is not the focus of this study) to also consider its relative merits compared to other policy options. This comparison of policy alternatives merits the input of key experts who can enrich our understanding of four key factors that impact on the methamphetamine consumption and dependency: (i) social (e.g. risk factors leading to methamphetamine use); (ii) environmental (e.g. places where the drug is consumed), (iii) market (e.g. tendency for users to seek out alternative illicit drugs if availability and/or price changes) and (iv) consumption (e.g. issues relating to dependency). In addition, experts can assist in assessing the importance of various modes of intervention (e.g. enforcement, harm reduction, treatment, and prevention) that have the potential to affect the success of policies. Based on these factors and models of intervention, experts can assist policymakers in evaluating the efficacy of alternative options in reducing methamphetamine consumption and dependency in Australia. The section that follows outlines a method for capturing and analysing such expert views.

Multi-criteria decision modelling

The notion of improving policy by incorporating a human factor into the evidence-base has widened the research applications of multi-criteria decision (MCD) modelling (Manning, 2008). MCD has the potential to underpin policy decision making as it provides an objective quantification of human experiences and judgement – information that advocates argue should be the foundation of all policy decisions (Neylan, 2008).

MCD draws on experts' subjective judgments regarding the relative effectiveness of proposed policy alternatives for reducing

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