



MONITORING DRUG USE IN THE DIGITAL AGE: STUDIES IN WEB SURVEYS

Utilising an online survey to monitor methamphetamine availability, prices and supply: involvement of organised crime in New Zealand

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Abstract: Differences in drug market conditions, for which data are often limited, can have important implications for the health and social harms of drug use and the related responses by relevant agencies in this field. A key component of monitoring illicit drug markets is developing an understanding of the availability and prices of illicit drugs, which can vary significantly over short periods of time and across small areas. This paper shows how the New Zealand Drug Trends Survey (NZDTS) was used to provide timely data on methamphetamine availability and prices in New Zealand. The survey results provide important data and insights into the methamphetamine market, such as many rural regions reporting greater methamphetamine availability than the urban regions with the largest cities. Further, this paper also reports on respondents' perceptions of the involvement of 'gangs' in methamphetamine supply, with respondents from rural regions with high methamphetamine availability and low prices more likely to report buying methamphetamine from a person they identified as a 'gang member or gang associate'. These findings from the NZDTS can help to inform future investment in health services and direct the focus of relevant public agencies to address both current and emerging areas of concern.

Introduction

Illicit drug markets are clandestine and dynamic markets that require close monitoring in order to inform appropriate policy responses. A key component of such monitoring is developing an understanding of the availability and prices of illicit drugs, which can vary significantly over short periods of time and between geographical areas as small as neighbourhoods (Caulkins, 2007; Kleiman, 1992; MacCoun and Reuter, 2001). Drug availability and prices can also vary between urban and rural areas, different regions of the same country or global regions (EMCDDA, 2018; Shukla et al., 2012; UNODC, 2017). These differences in market conditions, for which data are often limited, can have important implications for the health and social harms of drug use in a particular area and the related responses by relevant agencies in this field (e.g. health and social services and law enforcement) (EMCDDA, 2018). Addressing this data gap can help decision-makers and relevant agencies to take appropriate action to better respond to current issues and emerging trends, for example by making additional investments in drug prevention, treatment and other health services and law enforcement.

Over the past 20 years, New Zealand has experienced a rapid rise in methamphetamine use and the related areas of trafficking and clandestine manufacture (Wilkins et al., 2017a, 2017b). A glut in the international supply of methamphetamine in the East and South-East Asia region since the early 2010s has resulted in increasing availability and declining prices of methamphetamine in Oceania, including

Australia and New Zealand (UNODC, 2017). In New Zealand, there have been anecdotal reports of very high availability of methamphetamine in many small towns and rural areas (New Zealand Police Association, 2017; Otago Daily Times, 2017; Yalden, 2017). Some commentators have shown the role played by drug-trafficking outlaw motorcycle gangs, with links to Asian international organised crime groups, in expanding the methamphetamine market in rural regions (Kerr, 2016a, 2016b) (1).

Drawing on data from the New Zealand Drug Trends Survey (NZDTS), related to methamphetamine supply in New Zealand, this paper shows how web surveys can be used to provide timely data on evolving local and national issues in the drugs field. Specifically, the paper presents selected findings from the NZDTS (2017–2018) on methamphetamine availability and prices, and on respondents' perceptions of the involvement of 'gangs' in methamphetamine supply in different regions in New Zealand. These findings can help inform future policy and agency responses to mitigate the health and social harms of methamphetamine markets.

Methodology

NZDTS background

There is often limited local data on the extent of the drug problem in New Zealand to support the efforts of local communities in terms of increasing investment in drug prevention, harm reduction and drug treatment services. The New Zealand Drug Trends Survey (NZDTS), an anonymous online survey, was designed to address these data gaps by providing timely regional data on a range of aspects of the country's drug problem, including drug use trends, new drug types, drug market indicators, health service utilisation, help-seeking for drug problems, and support for new drug policy initiatives. The research team at Massey University, through which the NZDTS was conducted, intended that issues initially identified by the survey could be explored further with statistical modelling and tailored research methods.

Survey design

The NZDTS was promoted through a broadly targeted Facebook campaign from November 2017 to February 2018. The Facebook promotion campaign was aimed at people

(1) Outlaw motorcycle gangs in New Zealand are identifiable by distinctive gang regalia, including back patches, symbols, colours and tattoos, with many mimicking the motorcycle gang sub-cultures originally developed in the United States and more recently Australia (Gilbert, 2013; Lauchs and Staines, 2019; Newbold, 2000; Savage, 2020).

living in New Zealand who were aged 16 years or older and who expressed interest in a range of entertainment activities broadly associated with drug use, including nightlife, alcoholic beverages and certain music genres (Forsyth et al., 1997; McCaughan et al., 2005; Van Havere et al., 2011). To reduce the incentive for fraud, no reward was offered for completing the survey (Barratt et al., 2015). A custom survey software solution was developed to convert computer internet protocol (IP) addresses into a unique number that allowed the identification of respondents from outside the country and instances where multiple surveys were completed from the same computer, while ensuring respondent anonymity and avoiding any storage of IP addresses. Completed surveys were reviewed for consistency and extent of completion. The final sample consisted of 6 331 respondents. All measures in the survey were self-reported.

Select market measures

We considered several measures regarding drug markets among those who reported using a drug type in the previous six months. First, these respondents were asked about the current availability of the drug in terms of how easy it was to obtain, with four options given ('very easy', 'easy', 'difficult' or 'very difficult'). Second, they were asked about the price of common quantities and weights of the drug. Third, they were asked to self-report their perceptions of the sellers they had purchased the drug from in the past six months and given four answer options ('gang member or gang associate', 'drug dealer', 'social acquaintance', 'friend, partner or family'), of which they could select as many as applied. While, as noted above, gangs in New Zealand are generally identifiable by distinctive gang regalia, respondents' assessments of whether a drug seller was a 'gang member' or 'gang associate' were inevitably a matter of personal judgement influenced by their individual perceptions and related biases. The term 'drug dealer' was used in the survey to distinguish sources of supply that the respondent had some personal relationship with ('friend, partner or family' or 'social acquaintance') from suppliers whom they perceived as 'professional' drug sellers (a 'drug dealer').

Results

Demographics

Forty-five percent of the sample was female, 54 % male and 1 % transsexual or transgender. The average age of the respondents was 29 (range 16–87 years). Twenty-one percent were Māori and 72 % were of European ethnicity. Thirty-five percent had completed high school, 33 % had a trade

qualification and 28 % were university graduates. Sixty-five percent were employed (full or part time), 18 % were students, 11 % were unemployed or on a sickness benefit and 6 % were 'retired, parenting or in unpaid work'.

Regional distribution and community size

The highest proportions of respondents were from the three regions containing the largest cities (Auckland, 19 %; Canterbury, 13 %; and Wellington, 10 %), followed by those from the next largest North Island regions (Waikato, 8 %; Gisborne/Hawke's Bay, 8 %; Northland, 7 %; and Bay of Plenty, 6 %). Only 23 % of the New Zealand population lives in the South Island, with the majority of people concentrated in just two regions (Canterbury and Otago). We combined some of the small population South Island regions with neighbouring regions to ensure sufficient numbers were available for analysis ('Tasman/Nelson/Marlborough' and 'Southland/West Coast'). The resulting proportions of respondents broadly reflected the South Island population distribution (Canterbury, 13 %; Otago, 7 %; Tasman/Nelson/Marlborough, 6 %; and Southland/West Coast, 5 %). Overall, the sample compared well with the distribution of New Zealand's population as reported in the most recent census (Table 1). At the later stages of survey recruitment, we targeted the smaller rural regions to ensure that we had a good sample from such places, and this likely reduced the share of participants from Auckland Region (containing New Zealand's largest city). Sixty percent of the respondents reported that they lived in a 'city', 28 % in a 'small town' and 12 % in a 'rural area'.

Drug use patterns

Twenty percent of the sample reported using methamphetamine in the previous six months (1 250 respondents). High proportions of the sample also reported the use of cannabis (70 %), ecstasy (33 %), LSD (26 %), cocaine (11 %) and morphine (5 %) in the same period.

Current availability

Overall, 54 % of those who used methamphetamine in the previous six months reported the current availability of methamphetamine as 'very easy' to obtain (compared to 35 %, 'easy'; 9 %, 'difficult'; and 2 %, 'very difficult'). A higher proportion of methamphetamine users reported methamphetamine as 'very easy' to obtain in Northland (64 %), Manawatu-Wanganui (63 %) and Waikato (58 %) (Figure 1). Conversely, a lower proportion reported methamphetamine as 'very easy' to obtain in Otago (40 %) and Wellington (44 %). Meanwhile, a higher proportion of methamphetamine

TABLE 1

Comparison of NZDTS online sample with New Zealand national census population by region

Region	NZDTS sample, 2017/18 (%)	National population, 2017 census (%)
Auckland	19	35
Canterbury	13	13
Wellington	10	11
Waikato	8	10
Gisborne/Hawke's Bay	8	4
Northland	7	4
Otago	7	5
Bay of Plenty	6	6
Manawatu-Wanganui	6	5
Tasman/Nelson/Marlborough	6	3
Taranaki	5	2
Southland/West Coast	5	3

Note: NZDTS sample n = 6 141.

users who lived in small towns and rural areas reported methamphetamine as 'very easy' to obtain (59 % and 55 % respectively) compared with 'cities' (50 %).

FIGURE 1

Proportion of methamphetamine users who reported the current availability of methamphetamine as 'very easy' by region, 2017/18

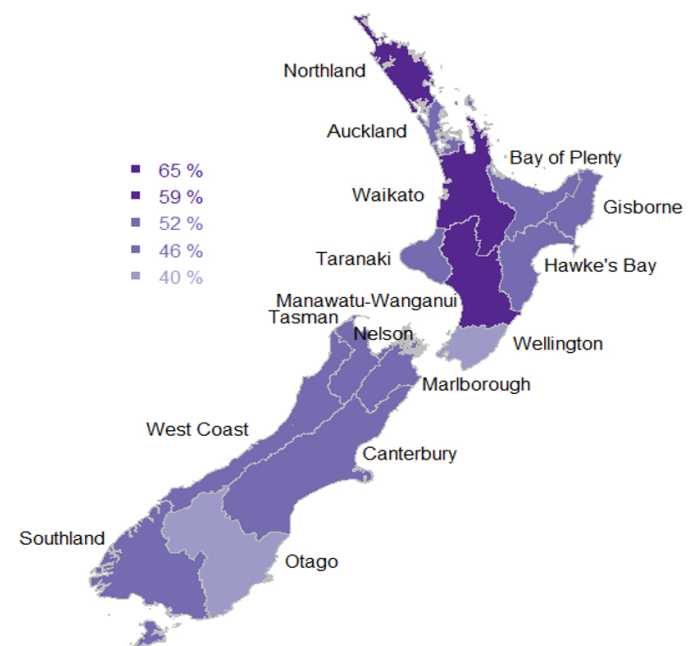
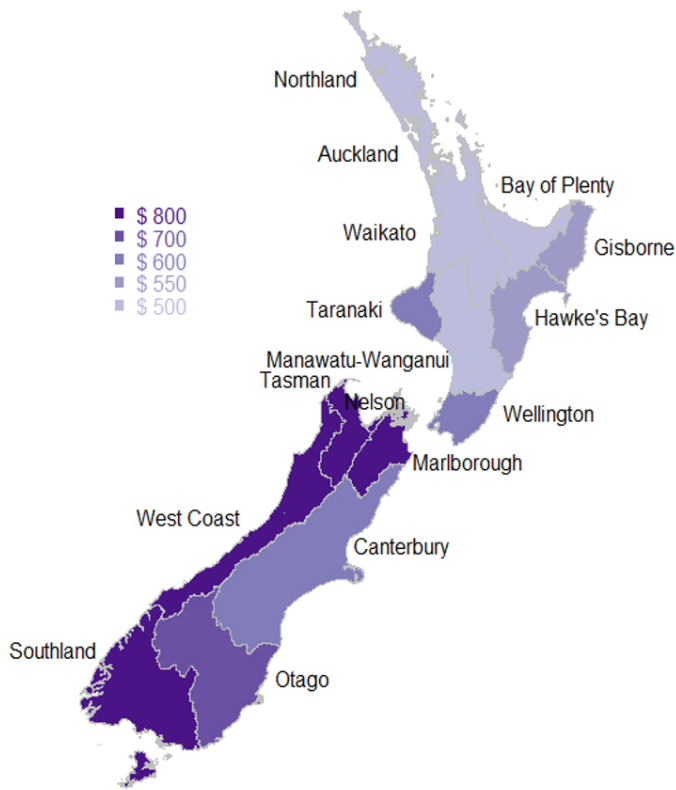


FIGURE 2
Price of a gram of methamphetamine by region (NZD), 2017/18



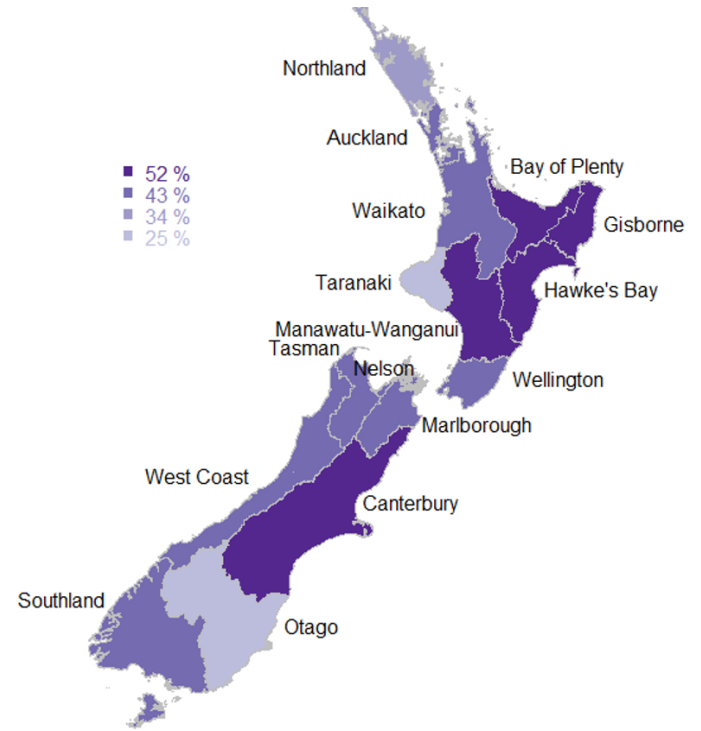
Prices

Overall, the median price reported for a gram of methamphetamine for the entire country was NZD 538 (New Zealand dollars). However, there was significant variation in the reported price paid by region. A lower median price of NZD 500 per gram was reported by a number of North Island regions, including Auckland, Bay of Plenty, Manawatu-Wanganui and Waikato (Figure 2). Conversely, a higher price of NZD 800 per gram of methamphetamine was reported by respondents from a number of South Island regions, including Tasman/Nelson/Marlborough and the Southland/West Coast.

Purchase from a 'gang member'

Overall, 47 % of respondents who had purchased methamphetamine in the past six months reported they had done so from someone they perceived to be a 'gang member or gang associate' (compared with 69 % from a 'drug dealer'; 62 % from a 'social acquaintance'; and 55 % from a 'friend, partner or family'). Higher proportions of methamphetamine users reported that they had purchased methamphetamine from a 'gang member' in Manawatu-

FIGURE 3
Proportion of methamphetamine users who reported purchasing methamphetamine from someone they identified as a 'gang member or gang associate' by region, 2017/18



Wanganui (56 %), Canterbury (54 %), Gisborne (52 %) and Bay of Plenty (52 %) (Figure 3). Conversely, lower proportions of respondents had purchased methamphetamine from a 'gang member' in Taranaki (33 %) and Otago (26 %).

Discussion

The NZDTS provided a number of important insights into the methamphetamine market in New Zealand. Many rural regions reported greater methamphetamine availability than the urban regions with the largest cities. This finding challenges the perception that is largely an urban problem. Consistent with economic theory, the regions with higher levels of methamphetamine availability also reported significantly lower methamphetamine prices. In many instances, respondents from rural regions with high methamphetamine availability and low prices were also more likely to report buying methamphetamine from a person they identified as a 'gang member or gang associate'. More sophisticated statistical modelling of the NZDTS data revealed that those living in a small town or rural area were 1.3 times more likely to report high availability of methamphetamine, while those who

reported they had purchased from someone they believed to be a 'gang member or gang associate' were 1.8 times more likely to report high methamphetamine availability (Wilkins et al., 2018). Further modelling revealed that, after controlling for a range of variables, respondents who had purchased methamphetamine from a 'gang member' reported paying NZD 29 (5 %) less for a gram of methamphetamine than the mean (NZD 563) (Wilkins et al., 2020).

The high availability of methamphetamine reported in rural areas may reflect a range of factors, including the close proximity of clandestine methamphetamine laboratories, which New Zealand Police have observed to be increasingly located in isolated rural locations in order to avoid detection (Howell et al., 2017; New Zealand Police Association, 2017). Moreover, regional economic decline and deprivation, which fuels problematic drug use as a means of coping with problems, and limited local police presence, which creates more opportunities for open drug selling and use (Wilkins et al., 2018), have also likely affected the high availability of methamphetamine in these areas. Many rural towns in New Zealand have only a small number of permanently stationed police officers, who are required to patrol large areas of isolated countryside. Furthermore, geographic distance from drug treatment and mental health services also plays a role in high rural drug use and availability, as people who wish to access professional help in order to address problematic drug use and mental health issues are not able to do so. Hence, demand is not reduced over time but rather is sustained at a high level, which the supply capacity of illicit drugs expands to meet. While there have been a number of recent government investments in drug treatment services in New Zealand, in some cases bolstering services at risk of collapse, there remain 'large holes in treatment provision across the country' (New Zealand Drug Foundation, 2020, p. 20).

Benefits and limitations of online drug surveys

There are a number of important limitations with online surveys that should be considered when interpreting their findings. Our online sample was a convenience sample and not statistically representative of the wider New Zealand population. Respondents reported very high levels of drug use compared with those interviewed for the representative New Zealand Health Survey (NZHS). Twenty percent of our online sample reported using methamphetamine in the past six months (1 250 respondents) compared to the 1 % of the NZHS sample who reported using methamphetamine in the previous year in 2016/17 (Ministry of Health, 2016). This likely reflects the targeted Facebook promotion of our online survey based on entertainment and music tastes, as well as the self-selection by people who use drugs, who may be more willing to participate in a drug survey.

It is important to note that the NZHS, like other representative surveys, also has limitations when surveying illicit drug use (Barratt et al., 2015). The NZHS is a broad health survey that asks a range of questions about physical and psychological health and the utilisation of health services, and consequently participants may be unprepared to answer questions about illicit drug use. The NZHS is also a face-to-face survey conducted at the respondents' homes, in which context participants may be reluctant to report the use of highly stigmatised and illegal drugs, such as methamphetamine, for fear of reprisals from law enforcement or social agencies or due to family concerns. Finally, it is worth noting that if only 1 % of the sample reports using methamphetamine, as in the NZHS, over 200 000 people would need to be surveyed to recruit the equivalent of the 1 250 methamphetamine users who completed our online survey (assuming a 60 % response rate). This underscores the opportunity of online convenience surveys to offer a platform for recruiting large numbers of otherwise hidden or hard-to-reach groups of people who use drugs.

The NZDTS online sample was broadly consistent with the country's regional population distribution and the demographic profile of the wider New Zealand population, including those who customarily are less likely to access the internet, such as the unemployed and economically disadvantaged ethnic minorities. For example, 21 % of the NZDTS online sample were Māori and 72 % European, compared with the wider New Zealand population, of whom 15 % are Māori and 74 % European (Statistics New Zealand, 2018). Similarly, our online sample did not over-represent those who typically show high levels of internet participation, such as males and students. Sixty-five percent of our online sample were employed, 18 % were students and 11 % were unemployed, compared to the wider New Zealand population, of whom 66 % are employed, 11 % students and 10 % receiving some kind of government benefit (Statistics New Zealand, 2018). It should be noted that, by international standards, New Zealand demonstrates a very high level of digital engagement (Statistics New Zealand, 2017). For example, 2.3 million New Zealanders, out of a total population of 4.8 million, log on to Facebook every day (Fyers and Cooke, 2017).

People who use drugs but are considered 'recreational' or 'non-problematic' users and who also use the internet more often may be more likely to participate in an online survey. While this might be the case, and may thus potentially skew the sample, it seems unlikely that this group of people are less knowledgeable about drug availability and prices than those who use the internet less frequently. Drug prices and drug availability are variables that are likely best measured by experienced buyers and sellers of drugs, whereas measuring prevalence of drug use in the population clearly requires a representative sample of users. As such, whether or not the sample in the NZDTS and other web surveys for drug data

collection is more skewed towards recreational drug users with high levels of internet participation, these surveys can still generate important data on a range of drug-related behaviours and drug markets more broadly.

Conclusions

The New Zealand Drug Trends Survey (NZDTS) illustrates the power of online surveys to reach a broad sample of geographically dispersed people who use drugs and who may not otherwise participate in traditional drug surveys. The findings from the NZDTS identify important differences in methamphetamine availability, prices and potential gang involvement between regions in New Zealand. The findings from this survey can help to inform future investment in health services and direct the focus of relevant public agencies to address both current and emerging areas of concern.

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EMCDDA Insights are topic-based reports that bring together current research and study findings on a particular issue in the drugs field. This paper is published as part of *Monitoring Drug Use in the Digital Age: Studies in Web Surveys*, an EMCDDA Insights that provides an overview of current knowledge and the latest developments in the field of web surveys on drug topics. The Insights contains in-depth reports on the methodology of web surveys, the available studies being carried out in different drug topics and analyses of the [European Web Survey on Drugs](#). The Insights will be of interest to researchers and scientists, people who use drugs, policymakers and their advisors, specialists and practitioners, and all those concerned with the issue of drugs and innovative methods.

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