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Key findings

Overview of trends in drug related harm in the past six months

Type of frequent drug user	Drug dependent	Accessed health services	Area of life harmed	Mean number of physical problems experienced	Mean number of psychological problems experienced
Methamphetamine users	59%	55%	89%	11	11
Ecstasy users (MDMA)	9%	14%	64%	6	6
Intravenous drug users	80%	62%	89%	11	10
All frequent drug users	42%	43%	80%	9	9

- Drug dependency** – Eighty percent of the frequent injecting drug users (IDU) and 59% of the frequent methamphetamine users were classified as drug dependent. The frequent ecstasy (MDMA) users had low levels of drug dependency.
- Areas of life harmed** – Nearly all the frequent methamphetamine users and frequent IDU had experienced harm in at least one area of their lives from their drug use in the past six months. Seventy-two percent of the frequent methamphetamine users and 68% of the frequent IDU reported harm to 'personal relationships' from their drug use.
- Physical and psychological problems** – The frequent methamphetamine users reported a mean of 11 physical and 11 psychological problems from their methamphetamine use in the past six months. Psychological problems commonly reported by frequent methamphetamine users included 'strange thoughts' hallucinations, paranoia, mood swings and short temper. Three out of ten of the frequent methamphetamine users and frequent IDU reported having suicidal thoughts related to their drug use in the past six months.
- Health services accessed** – Over half of the frequent methamphetamine users and frequent IDU had accessed a health service in relation to their drug use in the past six months. Thirteen percent of the frequent IDU had visited an Accident and Emergency Department and 12% had accessed an ambulance in relation to their drug use in the past six months. Approximately one-third of the frequent methamphetamine users and frequent IDU had visited a General Practitioner in relation to their drug use in the past six months.

Recent trends in drug related harm in New Zealand: key findings from the 2006 Illicit Drug Monitoring System (IDMS)

Introduction

The Illicit Drug Monitoring System (IDMS) was established in 2005 to provide ongoing and timely information on changes in drug use and drug related harm in New Zealand. It is planned that the IDMS will be conducted annually on an ongoing basis.

This research briefing summarises recent trends in drug related harm in New Zealand from the 2006 IDMS. Further research briefings from the 2006 IDMS are planned in the coming months and will focus on topics such as general trends in drug use, methamphetamine, regional drug trends, and intravenous drug use and related health issues.

Detailed findings from the 2006 IDMS can be found in the main project report which is available to download from the National Drug Policy website (www.ndp.govt.nz) or from the SHORE website (www.shore.ac.nz). Copies of the 2006 main report will also be sent to university and government libraries. Past research briefings and full reports from the 2005 IDMS can be downloaded from the SHORE website.

Method

A total of 318 frequent drug users were interviewed for the 2006 IDMS, including 114 frequent methamphetamine users, 111 frequent ecstasy (MDMA) users and 93 frequent injecting drug users. Study participants were recruited from the three main centres (i.e. Auckland, Wellington and Christchurch) using purposive sampling and 'snowballing' (Biernacki and Waldorf, 1981, Watters and Biernacki, 1989). Interviewing took place from July to October 2006. The research protocols used in the IDMS have been reviewed and approved by the Massey University Human Subjects Ethics Committee. Interviews are strictly confidential and anonymous. No participant in the study can be identified at any later date.

Analysis

Findings are presented for the combined sample of all the frequent drug users interviewed (i.e. frequent methamphetamine users, frequent ecstasy users and frequent injecting drug users). Differences between the three groups of frequent drug users for each question were tested using Fisher's exact test with p-values adjusted using Holm's step down procedure to maintain an overall alpha level of 0.05.

Demographic characteristics of the frequent drug users

Two thirds of the frequent drug users were male and the median age of the sample was 26 years old (mean 28 years old, range 16-58 years old). The frequent ecstasy (MDMA) users were younger than either the frequent methamphetamine users (23 years old vs. 30 years old, $p < 0.0001$) or the frequent injecting drug users (23 years old vs. 32 years old, $p < 0.0001$). Eighty-two percent of the frequent drug users were European and 15% were Maori. More of the frequent ecstasy users were European than either the frequent methamphetamine users (96% vs. 71%, $p = 0.0003$) or the frequent injecting drug users (96% vs. 78%, $p = 0.0006$). Forty-one percent of the frequent drug users were unemployed, sick or invalid. Twenty percent were high school or tertiary students. Only 34% of the frequent drug users were employed. The frequent methamphetamine users (22% vs. 51%, $p = 0.0003$) and frequent injecting drug users (28% vs. 51%, $p = 0.002$) were less likely to be employed than the frequent ecstasy (MDMA) users. More frequent ecstasy users were students (i.e. school/ tertiary) than either the frequent methamphetamine users (42% vs. 13%, $p = 0.0003$) or the frequent injecting drug users (42% vs. 3%, $p = 0.0003$). The frequent methamphetamine users were more likely to be students than the frequent injecting drug users (13% vs. 3%, $p = 0.0128$). Twenty-five percent of the frequent drug users had no educational qualifications. The frequent methamphetamine users (38% vs. 3%, $p = 0.0003$) and frequent injecting drug users (37% vs. 3%, $p = 0.0003$) were more likely to have no educational qualifications than the frequent ecstasy (MDMA) users. Twelve percent of the frequent drug users identified their sexual orientation as non-heterosexual. The frequent drug users had a median gross annual income of \$27,500. The frequent injecting users were more likely to earn less than \$20,000 gross annual income than either the frequent methamphetamine users (47% vs. 30%, $p = 0.048$) or the frequent ecstasy (MDMA) users (47% vs. 28%, $p = 0.0306$).

Patterns of drug use

The frequent drug users had tried a mean number of 13 different drug types in their lifetimes (median 13, range 5-22). The frequent injecting drug users had tried a greater mean number of drug types than the frequent methamphetamine users (15 vs. 13 drug types, $p = 0.0251$). The frequent methamphetamine users had tried a greater mean number of drug types than the frequent ecstasy users (13 vs. 11 drug types, $p = 0.0003$). The frequent drug users had used a mean of seven drug types in the past six months (median 7, range 1-18). There was no statistically significant difference between the three groups of frequent drug users with respect to the number of drug types reported used in the past six months.

The drug types most commonly used by the frequent methamphetamine users in the past six months were methamphetamine (100%), alcohol (86%), cannabis (86%), tobacco (81%), crystal methamphetamine (66%), ecstasy (MDMA) (49%), LSD (34%) and legal piperazine party pills (30%). Twenty-five percent of the frequent methamphetamine users had used benzodiazepines and 18% had used opiates in the past six months. The drug types most commonly used by the frequent ecstasy (MDMA) users in the past six months were ecstasy (100%), alcohol (98%), cannabis (92%), legal piperazine party pills (65%), tobacco (61%), LSD (49%), nitrous oxide (49%) and amphetamine sulphate (32%). Twenty-three percent of the frequent ecstasy (MDMA) users had used methamphetamine and 22% had used cocaine in the past six months. The drug types most commonly used by the frequent injecting drug users in the past six months were tobacco (86%), cannabis (80%), opiates (77%), methadone (74%), alcohol (68%), benzodiazepines (57%), Ritalin (43%), methamphetamine (40%) and legal piperazine party pills (30%). Twenty-nine percent of the frequent injecting drug users had used ecstasy (MDMA) and 24% had used heroin in the past six months.

Harm to different areas of life

The frequent drug users were asked whether their drug use had impacted on four general areas of their lives in the past six months (Table 1). The frequent injecting drug users were more likely to report financial problems related to their drug use than either the frequent methamphetamine users (72% vs. 54%, $p = 0.0139$) or the frequent ecstasy (MDMA) users (72% vs. 23%, $p = 0.0003$). The frequent ecstasy users were less likely to report legal/police problems related to their drug use than either the frequent methamphetamine users (7% vs. 33%, $p = 0.0003$) or the frequent injecting drug users (7% vs. 28%, $p = 0.0003$). The frequent ecstasy users were also less likely to report relationship/social problems related to their drug use than either the frequent methamphetamine users (26% vs. 72%, $p = 0.0003$) or the frequent injecting drug users (26% vs. 68%, $p = 0.0003$). There was no statistically significant difference between the three groups of frequent drug users with respect to the level of work/study problems ($p = 0.1185$).

Table 1: Drug related harms by frequent drug user group, 2006

DIFFERENT AREAS OF LIFE	Methamphetamine users (n = 114)	Ecstasy users (MDMA) (n = 111)	Intravenous drug users (IDU) (n = 92)	Combined modules (n = 317)
Financial problems	54%	23%	72%	49%
Legal/police problems	33%	7%	28%	23%
Relationship/social problems	72%	26%	68%	55%
Work/study problems	54%	41%	47%	47%
Any harm	89%	64%	89%	80%

Drug related physical problems

The frequent drug users were asked if they had experienced any of a list of 22 physical problems from their drug use in the previous six months. The frequent drug users who experienced physical problems reported a mean of nine physical problems in the past six months (median 9, range 1-22) (Table 2). The physical problems most often reported in relation to methamphetamine use were insomnia (87%), poor appetite (85%), weight loss (68%), profuse sweating (61%), heart palpitations (60%), headaches (59%), hot and cold flushes (59%) and tremors and shakes (57%).

Table 2: Drug related physical problems by drug type, 2006

Drug Type Physical problem	Methamphetamine Methamphetamine users (n = 114)	Ecstasy (MDMA) Ecstasy users (MDMA) (n = 111)	Opiates Intravenous drug users (IDU) (n = 93)
Teeth	57%	29%	52%
Profuse sweating	61%	33%	65%
Hot / cold flushes	59%	40%	69%
Heart palpitations	60%	38%	52%
Shortness of breath	51%	20%	47%
Chest pains	33%	10%	29%
Headaches	59%	74%	55%
Dizziness	39%	23%	44%
Tremors / shakes	57%	36%	55%
Fainting / passing out	14%	7%	26%
Fits / seizures	8%	1%	15%
Numbness / tingling	34%	17%	43%
Vomiting	19%	19%	51%
Stomach pains	36%	15%	51%
Muscular aches	49%	31%	65%
Joint pains	51%	27%	60%
Inability to urinate	27%	39%	35%
Poor appetite	85%	64%	78%
Skin problems	56%	16%	32%
Blurred vision	44%	33%	45%
Insomnia	87%	59%	78%
Weight loss	68%	35%	66%
At least one physical problem	99%	96%	98%

Drug related psychological problems

The frequent drug users were also asked if they had experienced any of 19 psychological problems from their drug use in the previous six months. The frequent drug users who experienced psychological problems reported a mean of nine psychological problems in the past six months (median 9, range 1-19) (Table 3). The psychological problems most often reported in relation to methamphetamine use were poor concentration (80%), mood swings (79%), irritability (78%), short temper (75%), strange thoughts (74%), confusion (73%) and anxiety (72%). Thirty-three percent of the frequent methamphetamine users reported experiencing suicidal thoughts in relation to their methamphetamine use.

Table 3: Drug related psychological problems by drug type, 2006

Drug Type Physical problem	Methamphetamine Methamphetamine users (n = 114)	Ecstasy (MDMA) Ecstasy users (MDMA) (n = 111)	Opiates Intravenous drug users (IDU) (n = 93)
Memory lapse	69%	50%	72%
Poor concentration	80%	53%	63%
Strange thoughts	74%	55%	44%
Mood swings	79%	44%	73%
Short temper	75%	30%	61%
Visual hallucinations	42%	45%	22%
Sound hallucinations	47%	40%	29%
Loss of sex urge	25%	17%	57%
Loss of energy	61%	40%	72%
Violent behaviour	36%	2%	19%
Anxiety	72%	32%	61%
Panic attacks	39%	8%	39%
Paranoia	70%	32%	51%
Depression	65%	30%	70%
Suicide thoughts	33%	7%	31%
Suicide attempts	7%	2%	11%
Confusion	73%	43%	54%
Irritability	78%	41%	69%
Flashbacks	33%	22%	24%
At least one psychological problem	97%	93%	96%

Drug dependency

A short dependency scale (SDS) was used to measure the frequent drug users' level of drug dependency. The SDS has previously been validated for a range of drug types including amphetamines, cocaine and cannabis (Gossop et al., 1995, Martin et al., 2006, Topp and Mattick, 1997). Eighty percent of the frequent IDU were classified as dependent on opiates using the SDS. Fifty-nine percent of the frequent methamphetamine users were classified as dependent on methamphetamine using the SDS, and 9% of the frequent ecstasy (MDMA) users were classified as dependent on ecstasy using the SDS. Thirty-nine percent of the frequent IDU and 24% of the frequent methamphetamine users reported that they 'always' wished they could stop their drug use. Thirty-one percent of the frequent IDU and 22% of the frequent methamphetamine users reported they 'often' or 'always' thought their drug use was out of control. When the frequent drug users were asked how easy did they think it would be for them to stop their drug use, 42% of the frequent IDU and 33% of the frequent methamphetamine users said it would be either be 'very difficult' or 'impossible' for them to stop.

Accessing health services

The frequent drug users were asked what health services, if any, they had accessed in relation to their drug use in the past six months. The frequent injecting drug users were more likely than the frequent methamphetamine users to have accessed an ambulance in relation to their drug use in the previous six months (12% vs. 3%, $p=0.033$) (Table 4). The frequent ecstasy (MDMA) users were less likely to have visited a General Practitioner (i.e. Doctor) than either the frequent methamphetamine users (5% vs. 27%, $p=0.0003$) or the frequent injecting drug users (5% vs. 36%, $p=0.0003$). The frequent methamphetamine users were more likely to have visited a counsellor in relation to their drug use than either the frequent ecstasy users (33% vs. 5%, $p=0.0003$) or the frequent injecting drug users (33% vs. 11%, $p=0.0003$). The frequent ecstasy users were less likely to have visited a drug and alcohol worker in relation to their drug use than either the frequent methamphetamine users (3% vs. 38%, $p=0.0003$) or the frequent injecting drug users (3% vs. 39%, $p=0.0003$).

Table 4: Health services accessed in relation to drug use in the past six months by frequent drug user group, 2006

Health service	Methamphetamine users (n = 114)	Ecstasy users (MDMA) (n = 111)	Intravenous drug users (IDU) (n = 92)	Combined modules (n = 317)
First aid	2%	2%	10%	4%
Ambulance	3%	4%	12%	6%
Accident & Emergency	6%	7%	13%	9%
Hospital (admitted)	4%	2%	10%	5%
General Practitioner	27%	5%	36%	22%
Counsellor	33%	5%	11%	17%
Drug & Alcohol worker	38%	3%	39%	26%
Social worker	7%	0%	4%	4%
Psychologist	10%	0%	5%	5%
Psychiatrist	10%	0%	8%	6%
Any health service	55%	14%	62%	43%

Discussion

The findings presented in this research bulletin detail the range of harm and problems suffered by frequent drug users in New Zealand. Nearly all the frequent drug users interviewed had experienced harm in their lives from their drug use, and many had experienced a number of physical and psychological problems from their drug use in the past six months. These findings provide some insight into the personal and social costs of frequent drug use and underline the rationale for providing drug treatment programmes and related support services to those drug users wishing to stop their drug use.

The research findings also present some important contrasts between the different types of frequent drug users. The frequent IDU had the highest levels of drug dependency, experienced high numbers of physical and psychological problems from their drug use and reported the highest likelihood of accessing an ambulance in relation to their drug use. Eighty percent of the frequent IDU were assessed as drug dependent with approximately one third reporting their drug use was out of control and wishing that they could stop use. Twelve percent had accessed an ambulance and 13% had accessed the Accident and Emergency Department of a hospital in the past six months in relation to their drug use. These problems relate to the physically addictive nature of opiates, and the risk of opiate overdose and subsequent need for emergency hospitalisation.

The frequent methamphetamine users also had high levels of drug dependency and experienced high numbers of physical problems from their drug use, while also experiencing a range of serious psychological problems. Many of the psychological problems experienced by the frequent methamphetamine users are consistent with the symptoms of drug psychosis, such as 'strange thoughts', sound and visual hallucinations, paranoia and short temper (see McKetin et al., 2006). It has been established by a number of studies over the years that methamphetamine can induce a psychotic state characterised by auditory and visual hallucinations and extreme paranoia (Chesher, 1993, Hall and Hando, 1994, McKetin et al., 2006, Sato et al., 1983, Wickes, 1993, Yui et al., 2001). In a recent study of frequent methamphetamine users in Sydney, 13% of the sample of frequent methamphetamine users screened positive for drug psychosis (McKetin et al., 2006). Those frequent methamphetamine users in the study who were classified as dependent on methamphetamine were three times more likely to have experienced psychotic symptoms than their non-dependent counterparts, even after adjusting for a history of schizophrenia and other psychotic disorders (McKetin et al., 2006).

The findings reported in this research briefing indicate that the frequent methamphetamine and frequent IDU users were suffering high levels of social deprivation. One third of the frequent methamphetamine users and frequent IDU had no educational qualifications. Only one quarter of the frequent methamphetamine users and frequent IDU were in paid employment. Nearly half of the frequent IDU earned less than \$20,000 in gross annual income. These demographic characteristics need to be taken into account when considering the barriers that drug users may face when wishing to access drug treatment programmes. They also suggest that both frequent opiate use and, more recently, frequent methamphetamine use are found among lower socio-economic groups.

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- National Drug Intelligence Bureau (NDIB)
- New Zealand Police
- New Zealand Customs Service
- Odyssey House

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References

- Biernacki, P., Waldorf, D. (1981) Snowball sampling: problems and techniques of chain referral sampling. *Sociological Methods and Research* 10 141-163.
- Chesher, G. (1993) Pharmacology of the sympathomimetic psychostimulants, In Burrows, D., Flaherty, B., MacAvoy, M. eds., *Illicit Psychostimulant Use in Australia*. Australian Government Publishing Service, Canberra, pp. 9-30.
- Gossop, M., Darke, S., Griffiths, P., Hando, J., Powis, B., Hall, W., Strang, J. (1995) The Severity of Dependence Scale (SDS): psychometric properties of the SDS in English and Australian samples of heroin, cocaine and amphetamine users. *Addiction* 90 607-614.
- Hall, W., Hando, J. (1994) Route of administration and adverse effects of amphetamine use among young adults in Sydney, Australia. *Drug and Alcohol Review* 13 277-284.
- Martin, G., Copeland, J., Gates, P., Gilmour, S. (2006) The Severity of Dependence Scale (SDS) in an adolescent population of cannabis users: reliability, validity and diagnostic cut-off. *Drug and Alcohol Dependence* 83 90-93.
- McKetin, R., McLaren, J., Lubman, D., Hides, L. (2006) The prevalence of psychotic symptoms among methamphetamine users. *Addiction* 101 1473-1478.
- Sato, M., Chen, C., Akiyama, K., Otsuki, S. (1983) Acute exacerbation of paranoid psychotic state after long-term abstinence in patients with previous methamphetamine psychosis. *Biological Psychiatry* 18 429-440.
- Topp, L., Mattick, R. (1997) Choosing a cut-off on the Severity of Dependence Scale (SDS) for amphetamine users. *Addiction* 92(7): 839-845.
- Watters, J., Biernacki, P. (1989) Targeted sampling: options for the study of hidden populations. *Social Problems* 36 416-430.
- Wickes, W. (1993) Medical aspects of psychostimulant use, In Burrows, D., Flaherty, B., MacAvoy, M. eds., *Illicit Psychostimulant Use in Australia*. Australian Government Publishing Services, Canberra, pp. 31-52.
- Yui, K., Goto, K., Ikemoto, S., Nishijima, K., Yoshino, T., Ishiguro, T. (2001) Susceptibility to subsequent episodes of spontaneous recurrence of methamphetamine psychosis. *Drug and Alcohol Dependence* 64 133-142.