



Ecstasy use in New Zealand: findings from the 1998 and 2001 National Drug Surveys

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Abstract

Aims To examine changes in the use of ecstasy, current conditions of supply, harms resulting from use, and the demographics of users.

Methods National Drug Surveys were conducted in 1998 and 2001. In each survey, a representative national sample of approximately 5500 people aged 15–45 years were asked about their drug use, including ecstasy use, using a Computer Assisted Telephone Interview (CATI) system. Response rates of 79% and 80% respectively were achieved.

Results Last-year use of ecstasy increased from 1.5% in 1998, to 3.4% in 2001. Large increases were found among men aged 20–24 (4.3% to 12.5%), and 25–29 (3.2% to 8.8%). In 2001, 43% of users thought ecstasy was easier to obtain and 29% thought the price was lower compared with a year earlier. About one in ten ecstasy users reported problems related to ‘energy and vitality’, ‘financial position’, ‘health’, and ‘outlook on life’. Ecstasy users were predominately male, aged 20–29, European and single, but were from a broad range of occupational and income-earning groups.

Conclusions The use of ecstasy in New Zealand increased between 1998 and 2001. Conditions of supply became easier. Users reported problems related to use in a range of areas of their lives. There was little evidence to suggest ecstasy use was limited to high-income-earning professionals.

The use of ecstasy became a global phenomenon in the late 1990s with use spreading to Eastern Europe, the Americas, southern Africa, the Middle East and South-East Asia.¹ Although global consumption remains concentrated in Western Europe and North America, both Australia and New Zealand have reported high prevalence levels by international standards.¹ Ecstasy is widely associated with dance music youth culture and use at ‘raves’ and dance clubs.^{2,3} It is used in these contexts to provide the energy to dance for long periods of time and to enhance sociability.⁴

Ecstasy (3,4-methylenedioxymethamphetamine, MDMA) combines traditional amphetamine qualities and hallucinogenic characteristics, like LSD.⁴ Immediate effects include increase in heart rate, blood pressure and body temperature, increased energy and alertness, and a warm state of empathy for others.⁴ High doses cause teeth clenching, paranoia, anxiety, hallucinations and confusion.⁴ Tolerance to ecstasy develops rapidly, characterised by a reduction in the positive effects and increase in the negative effects of the drug, and this has been associated with self-limiting patterns of use (ie, periods of voluntary abstinence to regain initial positive effects). However, a recent study of ecstasy use in Australia found evidence of more-frequent use of larger doses to overcome short-term tolerance, intravenous administration of the drug, and extensive poly-drug use in combination with ecstasy use.^{5,6}

Ecstasy can cause two types of acute side effect that often have lethal consequences: hyperthermia and hyponatraemia.^{7,8} These outcomes appear to result from the compounding of ecstasy's natural pharmacological effects (on the body's thermoregulatory mechanisms and ability to excrete fluid) with specific individual behaviours (such as dancing without a break and excessive intake of fluids) in specific settings (hot dance clubs).^{7,8} Although instances of serious acute effects are low relative to the extent of use, it is the unpredictability of such events (dose is not clearly predictive of adverse effects) and the risk of mortality that makes them significant.^{7,8} Three people have died as a result of taking ecstasy in New Zealand since 1998 (personal communication, National Drug Intelligence Bureau, 2002). Ecstasy has controversially been linked to damage to serotonin terminals in the brain with possible implications for short-term memory, cognitive function and mood regulation, particularly in later life.^{7,8} Confirmation of these effects awaits large-scale epidemiological studies.^{4,7,8}

Predicting the consequences of taking ecstasy is made more difficult by a number of features of the illicit market in which it is manufactured and sold. Although the term 'ecstasy' is supposed to refer to MDMA, in reality a number of substances with similar effects to MDMA are commonly sold as 'ecstasy', including MDEA, MDA and PMA.^{4,8,9} Users are generally unaware of the actual substance they are taking and this can cause problems when they experience effects that they were not anticipating or take additional doses before the full effects of the original dose are manifest leading to overdose.¹⁰ Ecstasy manufactured on the black market also varies in quality and potency (personal communication, New Zealand Police, 2002), and is cut with a range of adulterants such as caffeine and aspirin, or with other drugs such as methamphetamine, ketamine and ephedrine.⁸ Again, these features are unknown to the user and can have important implications for effects and harm. Finally, ecstasy users tend to be poly-drug users and this exposes them to the risks and harms of combining ecstasy with other drugs.⁶

A number of record seizures of ecstasy have been made by New Zealand Customs and Police in recent years. Total seizures of ecstasy increased from fewer than 3000 tablets in 1998, to 73 000 tablets in 2001, to 220 000 tablets in 2002 (personal communication, National Drug Intelligence Bureau, 2002). The dramatic increase in seizures has fuelled speculation about the extent of use of ecstasy and the current conditions of supply. Unlike methamphetamine, a drug that is also commonly associated with the dance party scene, there is no known domestic manufacture of ecstasy in New Zealand (personal communication, National Drug Intelligence Bureau, 2002).³ The synthesis of ecstasy is a complex process that requires sophisticated and closely monitored precursor chemicals, such as oil of Sassafras. The difficulty of manufacture has precluded the establishment of any large-scale domestic production in New Zealand to date. Only one case of ecstasy manufacture has ever been detected and this was on a small scale (personal communication, New Zealand Police, 2002). All of the ecstasy used in New Zealand is smuggled into the country from overseas; mainly from Western Europe but more recently from Asia.³ New Zealand is generally considered to have relatively effective border controls, as evidenced by the success against heroin importation in the 1970s.¹¹ The high price of ecstasy in New Zealand³ and its apparent availability in urban centres such as Auckland and Wellington have led the popular media to characterise it as the drug of choice of young, high-income-earning professionals.^{11,12}

This paper draws on data from the 1998 and 2001 National Drug Surveys to examine changes in the use of ecstasy, current conditions of supply, harms related to use, and the demographic characteristics of users in New Zealand. The prevalence of ecstasy use is put into the wider context of drug use in New Zealand through comparison with data relating to the use of marijuana and amphetamines from the same surveys.

Methods

The National Drug Survey interviews a sample of approximately 5500 people aged 15–45 years about their alcohol, tobacco, marijuana and other drug use, using a Computer Assisted Telephone Interview (CATI) system. Telephone numbers are selected using a stratified random digit dialling method so that each household (of a particular stratum) nationwide has an equal chance of being called. To represent the different socioeconomic characteristics of the population the country was divided into 33 strata. A proportionate sample from each stratum was then taken. Within each household, one person is randomly selected for an interview. Interviewers receive intensive training at the beginning of the survey, and a supervisor is present at each shift to monitor the quality and consistency of interviewing, and to handle any special problems. Each telephone number is called up to at least ten times in an effort to reach those seldom at home. The 1998 and 2001 surveys achieved response rates of 79% and 80% respectively. More details of the methodology can be found in Wilkins et al, 2002.¹³

During the interview, respondents are asked whether they have ever used substances from a list of drug types for recreational purposes. Ecstasy is included in this list. To enhance recognition by respondents interviewers read out a number of common terms and technical names for each drug type and for ecstasy they read 'E' and 'MDMA'. Questions are also asked about 'stimulants', which are described by the interviewer as 'uppers, speed, amphetamine, methamphetamine'.

In 2001, those who had used ecstasy in the last 12 months were asked a number of additional questions about their experience of use and supply. These included questions about whether use had harmed eight areas of their lives in the previous 12 months, and how price and availability compared with a year earlier.

All respondents were asked a range of general demographic questions including age, gender, ethnicity, marital status, employment status, occupation and income.

The findings of the two surveys were analysed for differences between the two samples as a whole, and for differences between the subgroups of the two samples using chi-square tests. All comparisons were tested at a 1% level for statistical significance after adjusting for design effects. Only significant changes are reported. Ninety nine per cent confidence intervals are reported. All analyses were conducted using SAS software.

A descriptive analysis is presented of the demographic characteristics of last-year ecstasy users.

Descriptive comparisons are made between males aged 18–29 who used ecstasy in the last year and those who did not.

Results

Prevalence of use Last-year use of ecstasy by those aged 15–45 years increased from 1.5% (1.0, 1.9) in 1998, to 3.4% (2.7, 4.1) in 2001. Increases were found for those aged 20–24 (from 3.2% (1.4, 5.1) in 1998 to 10.0% (6.9, 13.2) in 2001) and 25–29 (from 2.5% (0.9, 4.1) to 6.3% (3.8, 8.9)).

Most of the increase in ecstasy use was due to increased use by men (Figures 1 and 2). Last-year use by men aged 20–24 increased from 4.3% (1.4, 7.3) in 1998, to 12.5% (8.0, 17.1) in 2001, and last-year use by men aged 25–29 increased from 3.2% (0.8, 5.7) to 8.8% (4.8, 12.9).

Figure 1. Last-year use of ecstasy by men by age group, 1998 and 2001

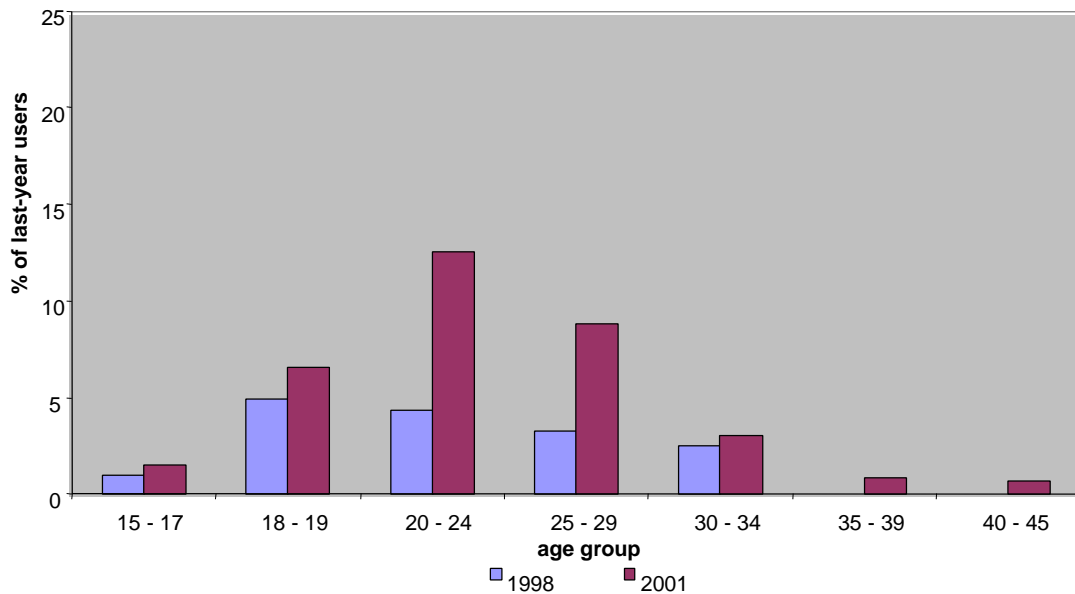
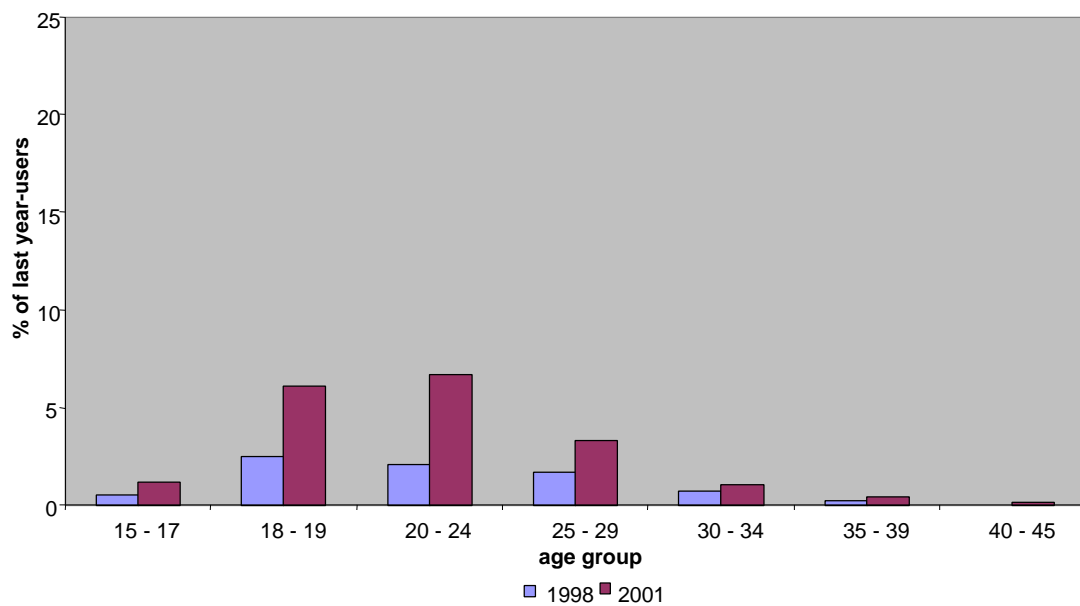
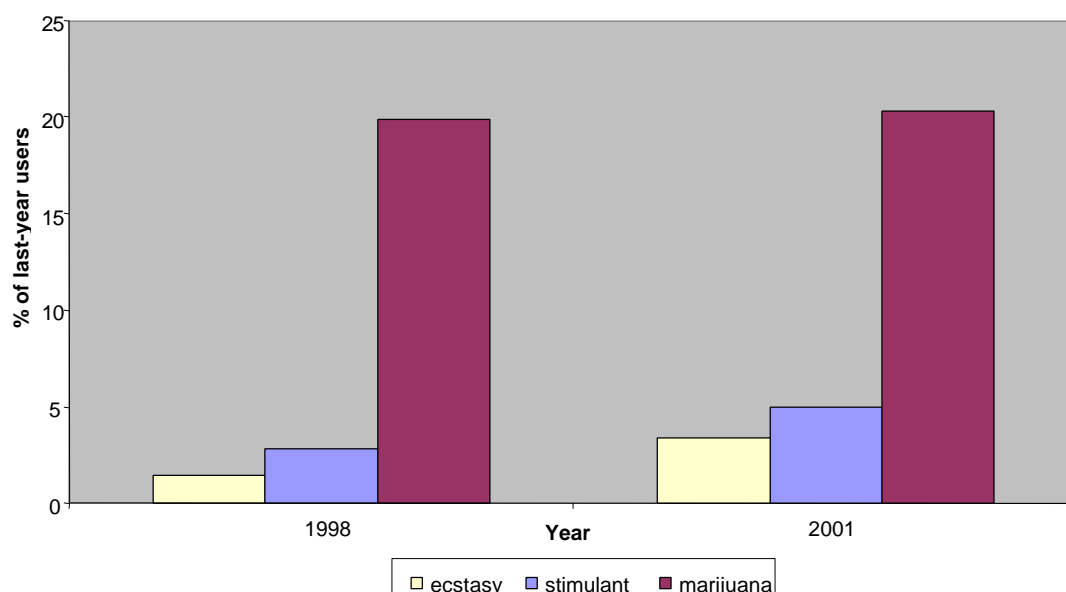


Figure 2. Last-year use of ecstasy by women by age group, 1998 and 2001



Between 1998 and 2001, ecstasy use increased from 1.5% (1.0, 1.9) to 3.4% (2.7, 4.1), and stimulant use (uppers, speed, amphetamine, methamphetamine) increased from 2.9% (2.2, 3.5) to 5.0% (4.2, 5.8), while there was no statistical change in marijuana use (19.9% (18.3, 21.4) and 20.3% (18.8, 21.9)) (Figure 3).

Figure 3. Last-year use of ecstasy, stimulants, and marijuana, 1998 and 2001



Conditions of ecstasy supply in 2001 In 2001, those who had used ecstasy in the previous 12 months were asked how the availability of the drug compared with that of a year earlier. Forty three per cent of users thought it was ‘easier’ to get ecstasy, 33% said it was ‘about the same’, 13% thought it was ‘harder’, and 11% ‘did not know’.

These respondents were also asked how the price of the drug compared with that of a year earlier. Forty one per cent thought the price was about the same, 29% thought it was lower, 16% said the price was higher, and 13% did not know.

Self-reported harms from ecstasy use in 2001 In 2001, last-year ecstasy users were asked whether the use of ecstasy had harmed eight areas of their lives in the previous year (Table 1). About one in ten reported problems related to ‘energy and vitality’, ‘financial position’, ‘health’, and ‘outlook on life’. Approximately one in twenty reported problems with ‘friendships and social life’ and ‘home life’. Problems related to ‘work and work opportunities’ and ‘children’s health’ were rare.

Table 1. Identified areas of life that were harmfully affected by the use of ecstasy in the last year, 2001

Area of life affected	Last-year users (%)
Energy and vitality	13
Financial position	12
Health	7
Outlook on life	8
Friendship and social life	5
Home life	4
Work or work opportunities	1
Children’s health or wellbeing	0

Demographics of last-year ecstasy users in 2001 Ecstasy users were overwhelming male (70%) and from the 18–29 age cohorts. Ecstasy users were particularly concentrated in the 20–29 age groups (67% of all users). Forty one per cent were 20–24 compared with 13% of the whole sample, and 26% were 25–29 compared with 13% of the whole sample. Only 5% of ecstasy users were 15–17, while this age group made up 12% of the whole sample.

Ecstasy users were overwhelming European (84%) or Maori (13%), as opposed to Asian (1%) or Pacific Island peoples (1%). A similar ethnic bias was displayed in the comparison of men aged 18–29 who had used ecstasy in the last year with those who had not. The ecstasy-using group were more likely to be European (82% vs 72%) and less likely to be Asian (2% vs 8%) or Pacific Island peoples (2% vs 6%), while numbers of Maori were comparable (14% both groups).

Ecstasy users were predominantly single (68%), as opposed to living with a partner (ie, either married or defacto, 20%) or separated from a partner (widowed, divorced or separated, 12%). When males aged 18–29 who used ecstasy in the last year were compared with those who did not, the ecstasy-using group were more likely to be single (74% vs 60%) than living with a partner (19% vs 36%).

Ecstasy users had a broad range of occupations with some in managerial positions (10%) and professional positions with university degrees (8%), but many others were in clerical/sales (34%), manual employment (15%), and skilled trade jobs (21%) (Table 2).

Table 2. Occupations of last-year ecstasy users in 2001

Occupation	Last-year users (%)
Professional university degree	8
Professional other tertiary	9
Director	1
Managerial	10
Clerical/sales	34
Skilled trade	21
Manual worker	15
Other	2

Comparison of males aged 18–29 who used ecstasy in the last year with those who did not showed that more of the ecstasy-using group were employed in clerical/sales positions (31% vs 20%) and fewer were manual workers (18% vs 28%), while employment in skilled trade (25% vs 23%) and managerial positions (10% vs 8%) was comparable (Table 3).

Respondents were asked about the amount of income they usually receive ‘in the hand’ (ie, after taxes). Consistent with the range of occupations reported, ecstasy users reported a broad range of net incomes. Twenty per cent of ecstasy users earned less than \$10 000, and 61% earned less than \$30 000. Ten per cent of ecstasy users earned \$50 000 or more. Comparison of men aged 18–29 who used ecstasy in the last year with those who had not found the ecstasy users earned only slightly more than those who hadn’t used ecstasy. More of the ecstasy-using group earned \$30 000–\$39

999 (25% vs 20%) and \$40 000–\$49 999 (13% vs 10%), but fewer earned \$50 000+ (5% vs 8%).

Table 3. Occupations of men aged 18–29 who used ecstasy and did not use ecstasy in last year, 2001

Occupation	Ecstasy users (%)	Others (%)
Professional university degree	6	9
Professional other tertiary	7	8
Director	0	1
Managerial	10	8
Clerical/sales	31	20
Skilled trade	25	23
Manual worker	18	28
Other	3	2

Discussion

Comparison of the findings from National Drug Surveys in 1998 and 2001 indicates increased use of ecstasy in New Zealand. Due to the difficulties of surveying illicit drug users,^{14,15} and in particular heavy drug users,¹⁶ these figures are likely to underestimate the true number of ecstasy users to some extent and consequently are best thought of as conservative estimates. However, the consistency of the survey methodology between the survey waves suggests the increase in use is likely to be fairly accurate. In combination with the increased use of amphetamines, and no change in cannabis use,¹⁷ these findings indicate some change in the nature of drug use in New Zealand. However, cannabis remains New Zealand's most-widely-used illicit drug, with 20% of those aged 15–45 reporting last-year use.¹⁸

Comparison of the changes in the prevalence of ecstasy use with changes in the use of stimulants (uppers, speed, amphetamine, methamphetamine) from the 1998 and 2001 surveys reveals some interesting differences despite both drugs being commonly associated with the dance party scene. As reported previously, increases in stimulant use were found among those aged 15–17 (1.6% (0.2, 3.0) in 1998 to 5.3% (2.8, 7.9) in 2001) and 20–24 (5.8% (3.4, 8.2) to 10.5% (7.3, 13.7)), and among men aged 15–17 years (1.5% (0.0, 3.2) to 5.7% (2.2, 9.2)).¹⁸ As reported here, increases in ecstasy use were found among those aged 20–24 (3.2% (1.4, 5.1) to 10.0% (6.9, 13.20)) and 25–29 (2.5% (0.9, 4.1) to 6.3% (3.8, 8.9)), and among men aged 20–24 (4.3% (1.4, 7.3) to 12.5% (8.0, 17.1)) and 25–29 years (3.2% (0.8, 5.7) to 8.8% (4.8, 12.9)). The increases in ecstasy use were larger than for stimulants in many of the age cohorts despite the absence of any domestic manufacture of ecstasy in New Zealand. However, there was no significant change in ecstasy use by those aged 15–17 (0.8% (0.0, 1.7) to 1.4% (0.1, 2.7)) compared with a fairly large and significant change in stimulant use in the same age group (1.6% (0.2, 3.0) to 5.3% (2.8, 7.9)). In 2001, 15.0% (7.6, 22.3) of men aged 18–19 had used stimulants in the last year (the highest prevalence of stimulant use for any age cohort for men)¹⁸ compared with only 6.6% (1.4, 11.7) of men aged 18–19 using ecstasy in the last year. This may indicate some cultural, social or economic separation between the use of amphetamine and the use of ecstasy by young people in New Zealand. It may be the case that locally

manufactured amphetamine is easier for young people to access than internationally smuggled ecstasy.

Reports in 2001 of easier availability and lower prices for ecstasy compared with a year earlier suggest improving conditions of supply despite record seizures of the drug by Customs and Police. However, these data indicate only *changes* in availability and prices and not absolute conditions of supply. It still may be the case that internationally smuggled ecstasy is more difficult to obtain than locally produced methamphetamine and cannabis.

A minority of ecstasy users reported problems related to their use of ecstasy. The areas in which problems were most commonly reported were 'energy and vitality', 'financial position', 'health' and 'outlook on life'. Many of these problems are consistent with the amphetamine attributes of ecstasy, which allow users to sustain long periods of intensive physical activity, such as dancing, while under the influence of the drug but result in exhaustion and depression in the days after use.^{5,6} The relatively low level of problems related to 'friendship and social life' (5%) may reflect the empathy-enhancing qualities of ecstasy as opposed to the aggression sometimes reported by amphetamine users. The low level of problems experienced with 'work and work opportunities' (1%) may reflect the fact that unlike traditional amphetamines, which are sometimes used to extend endurance at work, the empathy-inducing qualities of ecstasy restrict its use to leisure contexts.

The eight questions asked about the harms relating to ecstasy use in the 2001 survey can provide only a very broad assessment of the health consequences of use. Respondents were not asked about specific problems and were not able to express the seriousness of the harms they had experienced. Time constraints on the length of the interview meant detailed questioning about the harms of any one drug were not feasible in a population-level drug survey of this type. An Australian study of regular ecstasy users (three times or more in the last year) that drew on a snowball sample and conducted in-depth questioning about harms found users commonly reporting a range of psychological and physical side effects.⁶ These included blurred vision (46% of participants), numbness (42%), confusion (30%) and anxiety (27%) while experiencing the effects of the drug, and loss of energy (61%), irritability (60%), muscle aches (58%), insomnia (52%), depression (50%), confusion (36%), anxiety (33%) and paranoia (31%) in the days after use.⁶ A high proportion of the participants in the Australian study reported binge and intravenous use of ecstasy, and extensive poly-drug use, all of which may have had an impact on the extent of harms reported.

The popular perception of ecstasy users in New Zealand, as portrayed in the popular media, is often of young, high-income-earning professionals involved in the dance party scene. The examination of the demographic characteristics of last-year ecstasy users from the 2001 National Drug Survey provided only mixed evidence to support this popular stereotype. Ecstasy users were predominantly male and from the 20–29 year age cohorts, but were from a broad range of occupational backgrounds and income-earning capacities. Ecstasy users were more likely to be European, single, have clerical/sales employment, and earn middle-level incomes.

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