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## Key findings

- Research indicates that there are similarities between gambling and drug addiction, with many gamblers engaging in licit and illicit drug use and many drug users engaging in gambling practices (Gupta & Derevensky, 1998).
- In 2005, the level of problem gambling (defined as moderate and high risk gambling as measured by the Canadian Problem Gambling Index), was 1.6% of the SA population aged 18 years or over and 1% of those aged 16-17 years.
- Half of those interviewed for the SA 2008 EDRS had gambled a median of four times in the month prior to interview, with poker machines the most popular reported form of gambling activity.
- Two-thirds of gamblers were male compared to just over a third of the non-gamblers.
- Three-quarters of those who gambled were in some form of employment (either full or part time), compared to just over half of the non-gamblers.
- Those who had gambled commenced ecstasy use at a younger age than non-gamblers and progressed into regular use of ecstasy in a shorter time period.
- More gamblers reported recent use of methamphetamine and alcohol, and also reported a higher frequency of use of ecstasy, 'any' methamphetamine, cannabis and alcohol than those who did not report gambling in the month prior to the interview.
- More gamblers than non-gamblers were assessed as methamphetamine dependent and in need of evaluation for alcohol dependence, but were less likely to have medium to high levels of psychological distress or to report having a mental health problem.
- Gamblers were also more likely than non-gamblers to report using other drugs when coming down from ecstasy and to report driving over the limit of alcohol.
- The results of this exploratory study suggest that more research needs to be initiated examining the interaction between methamphetamine use and gambling practices.
- In summary, gambling behaviour in the SA 2008 EDRS sample was a marker for increased use of various drugs and increased frequency of use of those drugs used.

## Gambling practices among regular ecstasy users in South Australia

### Introduction

*'If they use a lot of speed then they tend to develop poker habits, they spend a lot of money at the pokies. Pokies and methamphetamine use go together way too well. It may be the flashing lights, pressing buttons, or because its open late at night, and you don't have to talk to anyone else, because you're off your face. It may be a brain thing like satisfaction, you know the barriers come down – it becomes compulsive type of behaviour'.*

Comment by key expert interviewed for SA 2008 EDRS.

The statement above together with comments of participants and other key experts prompted an investigation of the issue of gambling amongst regular ecstasy users. The Ecstasy and Related Drugs Reporting System (EDRS; formerly the Party Drugs Initiative, or PDI) is the most comprehensive and detailed study of ecstasy and related drug markets in Australia, with the South Australian survey expanded to investigate the gambling practices of ecstasy users. Gambling and the use of illicit substances are highly publicised problem behaviours that affect many members of our community. Those with problematic gambling and/or illicit substance use and their family members are often in need of assistance from various government and non-government agencies including counselling and financial services and in some cases, legal professions. Gambling and illicit substance use are a financial and social burden on society and need to be better understood, especially in cases where these practices are co-existent, with one practice possibly contributing to the other.

### Previous Literature

Gambling practices have been found to commonly commence in early adolescence surpassing the initiation of alcohol, cannabis and tobacco use in adolescence (Gupta & Derevensky, 1998). The age of onset of gambling is posited to be around 11 to 13 years of age, usually involving gambling on such as activities as bingo and lottery games. Researchers have consistently found that young people with serious gambling problems report double the rate of tobacco use and

twice the weekly rate of alcohol use compared to their peers, with cannabis use in young gamblers found to be up to four -times greater compared to peers (James, 2004).

Research indicates that there are similarities between gambling and drug addiction, with many gamblers engaging in licit and illicit drug use and vice-versa. Gordon and Holmwood (2008, in press), in their review of comorbidity issues, interviewed SA key experts in the mental health and drug and alcohol fields, and found that gamblers had a high prevalence of current and lifetime substance use, exceeding that of the general population. The authors noted the multifaceted nature of gambling in that it can be defined as an addiction, an affective disorder, and an obsessive-compulsive disorder. They suggest that gambling can be classified as an addiction with people developing a tolerance to the behaviour as they feel a need to spend more time and money to achieve the same level of excitement, similar to when developing a tolerance to drugs. Moreover, withdrawal symptoms may occur on abstinence from gambling resolving when gambling is recommenced, as happens when people are withdrawing from many drugs. The authors noted that gambling behaviours tend to persist over time in comparison to substance use and related problems, which tend to diminish, as people get older. Gambling is also an affective disorder with problematic gamblers often diagnosed with a major depressive disorder or hypomanic disorder; so too are many substance users. They posited that gambling could also be defined as a specific type of obsessive-compulsive disorder, with recurrent and persevering thoughts, and impulses that are experienced as obtrusive. The authors also noted that there is also a strong relationship between the severity of substance use and the severity of problem gambling, with higher rates of substance use being indicative of more severe gambling problems and vice versa.

In 2005, the SA Department for Families and Community Services in combination with the Office for Problem Gambling, conducted telephone interviews with 17,000 adults (South Australia, Department of Health, Population Research and Outcome Studies Unit, 2006). They found that the rate of problem gambling (which is defined as moderate and high risk gambling), as measured by the Canadian Problem Gambling Index, was 1.6% of the SA population aged 18 years or over and 1% of those aged 16-17 years old. Sixty-two percent of problem gamblers used alcohol or drugs while they were gambling, with problem gamblers more likely to gamble using poker machines. Previous research has found that the majority of gamblers and substance users are male (Huang et al. 2007).

### **Ecstasy and Related Drugs Reporting System**

The EDRS is conducted using a similar methodology to the Illicit Drug Reporting System (IDRS), monitoring the price, purity and availability of 'ecstasy' (MDMA) and other related drugs such as methamphetamine, cocaine, GHB and ketamine. It also examines trends in the use and harms of these drugs. The data collection includes: a) surveys with

regular ecstasy users (REU); b) surveys with key experts who have contact with regular ecstasy users through the nature of their work; and c) the analysis of existing data sources that contain information on ecstasy and other drugs.

Regular ecstasy users were recruited for the EDRS as they are considered a sentinel group able to provide information on trends in ecstasy and related drug use and related harms. The information from the REU survey is therefore not representative of illicit drug use in the general population, and is not representative of other illicit drug users (e.g. in other geographical areas, occasional users, etc), but it is indicative of emerging trends that may warrant further monitoring and/or investigation. Further details, including key expert and indicator data, will be published in the national and jurisdictional EDRS Drug Trends annual reports, which will be available through NDARC in April 2009. Previous years' findings are available in national and jurisdictional reports on the NDARC website, [www.ndarc.med.unsw.edu.au](http://www.ndarc.med.unsw.edu.au) (click on 'Drug Trends').

In 2008, participants in the SA EDRS were asked about their gambling practices in the month prior to interview. This Bulletin presents the findings from an exploratory study of the gambling practices of a group of ecstasy users: comparing the drug use and practices of those participants in the 2008 SA EDRS who had gambled in the month prior to interview with those who had not.

### **Method**

#### **Participants**

Seventy-four participants with a median age of 24-years (range 17 to 59-years) volunteered for the EDRS in 2008. Slightly more participants were male (53%), employed (82%) and were well educated, with the majority having completed some form of tertiary education, or currently studying at tertiary level (78%).

Participants were recruited through advertisements in two entertainment-focused street magazines, on university notice boards and in several centrally located music stores. In addition, advertisements were posted on a popular dance music website containing links to a DASSA intranet web page where potential participants could lodge their interest in taking part. Some participants were also recruited using 'snowball' procedures (Biernacki & Waldorf, 1981). Informed consent was sought and gained from all participants, who were interviewed individually. Ethics approval was obtained prior to commencement of the study.

#### **Procedure**

Participants were interviewed from May to July 2008. Criteria for entry into the study were: engaging in regular ecstasy use at least once a month in the previous six months, being at least 16 years of age and residing in the Adelaide metropolitan area for at least the 12 months prior to interview.

Written, informed consent was obtained prior to participation. Confidentiality and anonymity were assured during 45-minute (approximately) face-to-face interviews and all participants were reimbursed for their time and travel expenses. Interviews took place in varied locations convenient to the participants. Trained research interviewers with experience and understanding of how to administer the survey questionnaire conducted all interviews.

## Results

*Notes on interpretation: 'Prevalence' data in this bulletin refer to the proportion of participants who had used the drug on at least one occasion in the last six months. 'Frequency' data refer to the number of days on which those participants had recently used the drug. 'Lifetime' refers to ever having used a drug. 'Recent' refers to the six months preceding interview. Due to the criteria used for participant inclusion in the study, all participants report lifetime and recent use of ecstasy. Furthermore, due to rounding of percentages, some columns may not add to 100%.*

The results are based on a small number of participants with 37 participants (or half of the total SA sample) having gambled in the month prior to interview. Twenty-eight had not gambled and nine were either not asked the questions or declined to answer. As a result, descriptive statistics are provided. The data were split into two groups: those who had gambled in the month prior to interview (gambling group or gamblers, n=37), and those who had not gambled in the month prior to interview (non-gambling group or non-gamblers, n=28).

### Demographic Characteristics

The demographic characteristics of both groups were similar with the median age of both groups being 24-years and the median level of high school years of education completed for both groups was grade 12, although 8% of the gamblers had not completed grade 10. Previous history of imprisonment was also similar for both groups, with 8% of gamblers and 7% of non-gamblers reporting previous imprisonment.

There were some differences however, with more males in the gambling group: two-thirds of this group were male compared to just over a third of the non-gambling group. Seventy-eight percent of the gambling group were in some form of employment (either full or part time), which was more than the non-gambling group where only 53% were in some form of employment.

**Table 1: Demographic characteristics of gamblers and non-gamblers**

Characteristic	Gamblers (n=37)	Non-gamblers (n=28)
Age (median in years)	24	24
Gender (% male)	65	39
Employment (%)		
Not employed	17	29
Full-time*	25	18
Part-time/casual	31	21
Full-time student	3	18
Both studying & employed	25	14
School education (median in years)	12	12
Tertiary education (%)		
None	49	32
Trade/technical	29	32
University/college	23	36
Prison history (%)	8	7

Source: EDRS REU interviews

\* includes 'self-employed'

### Gambling Practices

Participants were asked whether they had gambled in the month prior to the interview and, if so, the number of times they had done so and what form of gambling they had engaged in. They reported having gambled a median of four times (range 1 to 28 times), with forty-six percent reporting doing so more than weekly. The majority (79%) had gambled at the pokies or the casino (where they would have had access to poker machines), with smaller proportions reporting gambling on the horses, lotteries, keno and sporting events.

### Drug Use Patterns

#### Ecstasy

An examination of ecstasy use patterns, which includes use of pills, powder and capsules, indicates that those in the gambler group first tried ecstasy at a median age of 18 years, slightly younger than those in the non-gamblers group (median age 19-years). The gamblers group also initiated into regular ecstasy use practices (at least once per month) earlier: gamblers reported regularly using ecstasy within 12-months of first trying ecstasy, whereas non-gamblers took two-years to commence regular use (see Table 2). Gamblers also reported using ecstasy more frequently at a median of 16 days in the six months prior to interview compared to 12 days for non-gamblers. Fewer gamblers reported that 'ecstasy' was their drug of choice.

**Table 2: Ecstasy use patterns of gamblers and non-gamblers**

Characteristic	Gamblers (n=37)	Non-gamblers (n=28)
Ecstasy		
Median age first used – years	18 (18-53)	19 (17-59)
Median age used regularly	19 (16-44)	21 (17-47)
Median days used in last 6 months	16 (6-96)	12 (6-91)
Drug of choice (%)	41	56

Source: EDRS REU interviews

### Methamphetamine

More gamblers (68%) than non-gamblers (50%) reported using some form of methamphetamine in the six months prior to interview and doing so more frequently at a median of 12 days compared to six days for the non-gamblers (see Table 3). A larger proportion of gamblers reported using methamphetamine more frequently than weekly, including daily use, and also reported that methamphetamine was their drug of choice.

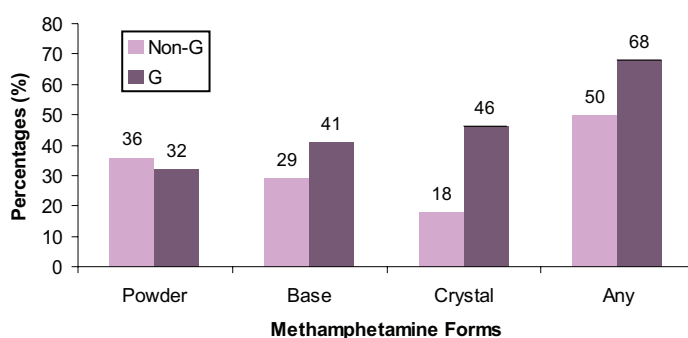
**Table 3: Methamphetamine use patterns of gamblers and non-gamblers**

Characteristic	Gamblers (n=37)	Non-gamblers (n=28)
Median age first used in years (range)	18 (15-36)	20 (16-28)
Ever used (lifetime) (%)	81	79
Used in last 6 months (%)	68	50
Main drug of choice (%)	12	7
Days used 'any' in last 6 months: median (range)	12 (1-180)	6 (1-70)
Monthly use (%)	16	7
< weekly use (%)	52	72
> weekly use (%)	32	21
Daily use	8	0
Recent use (%):		
Powder	32	36
Base	41	29
Ice/crystal	46	18
Median days used in last 6 months (range)		
Powder	3 (1-90)	5 (1-8)
Base	11 (1-170)	7 (2-24)
Ice/crystal	12 (2-90)	7 (1-60)

Source: EDRS REU interviews

A more detailed examination of the use of methamphetamine indicates that more gamblers had used base methamphetamine (at 41% compared to 29%), and crystal methamphetamine with almost half reporting recent use of crystal methamphetamine (46%) compared to 18% of non-gamblers, in the six months before interview (see Figure 1).

**Figure 1: Methamphetamine forms used in six months prior to interview, gamblers and non-gamblers**



Source: EDRS REU interviews

### Cannabis

An examination of cannabis use demonstrates the same pattern, with slightly more gamblers (84%) reporting recent use of cannabis compared to non-gamblers (75%), but of more interest is the frequency of use, with gamblers reporting use on a median of 72 days (range 1-180) compared to forty-eight days (approximately twice weekly; range 1-180) for non-gamblers. A third (36%) of the gamblers reported daily use of cannabis and 84% reported more than monthly use compared to non-gamblers (19% and 71% respectively).

### Alcohol

The use of alcohol displays a slightly different pattern from other drugs, with similar numbers having used alcohol recently (gamblers 97%; non-gamblers 96%), but again gamblers had used alcohol more frequently. Gamblers reported using alcohol for a median of 72 days (approximately three times a weekly; range 2-180) compared to 24 days (approximately weekly use; range 1-180) by non-gamblers, with a larger proportion of gamblers reporting greater than monthly use (94%) compared to non-gamblers (78%).

### Risk Taking Behaviours

An examination of poly-drug use patterns revealed that similar numbers in both groups reported usually using other drugs with ecstasy (97%), but gamblers were more inclined to report using other drugs when coming down from ecstasy (92%) than non-gamblers (71%). A larger proportion of gamblers (69%) than non-gamblers

(61%) reported driving under the influence of alcohol and driving over the limit (gamblers 80%; non-gamblers 57%) in the six months prior to interview .

### **Health Related Issues**

The Alcohol Use Disorders Identification Test (AUDIT) was administered to examine alcohol dependence (Babor et al. 2001). As might be expected, considering the frequency of alcohol use by the gamblers, a larger proportion of gamblers were assessed as being in need of evaluation for alcohol dependence (gamblers 17%; non-gamblers 7%) and fewer gamblers (17%) than non-gamblers (30%) were assessed as having no problematic use of alcohol.

Psychological distress was also investigated with the use of the Kessler Psychological Distress Scale (Kessler & Mroczek, 1994). The findings were interesting, with fewer gamblers (43%) than non-gamblers (58%) assessed as having medium to high levels of psychological distress in the month prior to interview. This finding was further reinforced with fewer gamblers (5%) reporting recently having a mental health problem in comparison to non-gamblers (29%).

Methamphetamine dependence was also examined using the Severity of Dependence Scale (Gossop et al. 1995), with twice as many gamblers assessed as methamphetamine dependent.

### **Conclusions**

In this exploratory study we found that half the SA 2008 EDRS sample of regular ecstasy users had gambled in the month prior to interview, with poker machines being the most popular method. Consistent with previous research, the majority of gamblers were male. Those who had gambled commenced ecstasy use at a younger age than non-gamblers and progressed into regular use of ecstasy in a shorter time period. More gamblers reported recent use of methamphetamine and alcohol, and also reported a higher frequency of use of ecstasy, 'any' methamphetamine, cannabis and alcohol than those who did not report gambling in the month prior to the interview. More gamblers than non-gamblers were assessed as methamphetamine dependent and in need of evaluation for alcohol dependence, but were less likely to have medium to high levels of psychological distress or to report having a mental health problem. Gamblers were also more likely than non-gamblers to report using other drugs when coming down from ecstasy and to report driving over the limit of alcohol.

In this study, gamblers engaged in more risk taking behaviours than non-gamblers and were more likely to engage in polydrug use, use drugs at a greater frequency, and to take risks when driving. The high levels of alcohol, methamphetamine, and cannabis use by gamblers indicate co-occurrence of problematic behaviours, consistent with previous research (Cunningham-Williams, 2000; Gordon & Holmwood, in Press; Rush et al., 2008). Gamblers in this study were assessed as having lower levels of psychological distress than non-

gamblers, which may be due to those in the gambling group being predominantly male and less likely to acknowledge and subsequently to report mental health issues (personal communication, Assoc. Prof. Paul Delfabbro, December 2008). Rush et al. (2008) in their study found that mental health issues did not impact on associations between substance use and problem gambling.

Research suggests that those who present to treatment agencies with problematic gambling issues should also be screened for illicit substance use and vice versa (Cunningham-Williams, 2000; Potenza, 2005; Rush, et al. 2008), as the continued use of illicit substances may impact on the success of treatment for gambling. The findings highlight the need to develop relevant education strategies targeting ecstasy and other stimulant users, such as information about how excessive substance use may encourage excessive gambling practices and vice versa. Finally, the results of this exploratory study suggest that more research needs to be initiated examining the interaction between methamphetamine use and gambling practices.

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