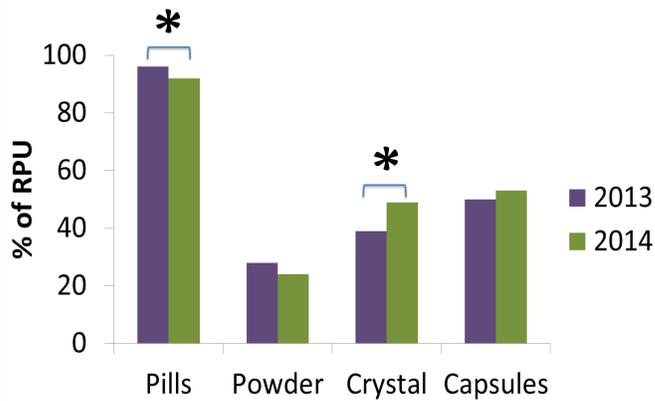


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A Shift in the Use of Ecstasy Forms

In the EDRS, we distinguish between four different forms of ecstasy: pills, powder, crystal MDMA and ecstasy capsules.

Figure 1: Proportion of EDRS participants in the NSW sample reporting the use of each ecstasy classification in the 6-months prior to interview.



* Significant compared to p-critical value of 0.0125 for 4 comparisons.

Crystal MDMA was introduced as its own category in the 2013 EDRS survey.

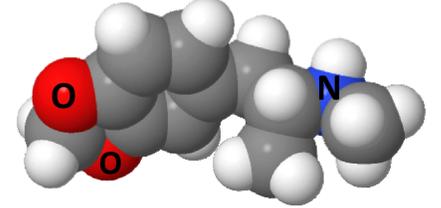
As shown in figure 1, there was a significant decline in the proportion of regular psychostimulant users (RPU) who reported using ecstasy pills and a significant increase in RPU reporting the use of crystal MDMA from 2013 to 2014.

Given this increase and the fact that Crystal MDMA accounts for a sizable proportion of the sample (49%), the current study examined the predictive factors of crystal MDMA users.

We hypothesised that crystal MDMA users present riskier patterns of drug use and lower health outcomes compared to non-crystal MDMA users.

Crystal MDMA

Figure 2: Chemical structure of the MDMA molecule.



As the name suggests, MDMA crystal is the crystalline form of 3,4-methylenedioxy-N-methylamphetamine and as a result a purer form of ecstasy.

In relation to physiological differences, the absorption of crystals in the digestive system is higher compared to pills or powder MDMA. As a result, users experience a stronger 'peak' effect and longer lasting aftereffects.

As the purity of the crystals is higher than ecstasy pills, users may often ingest similar measures of crystal MDMA which can potentially lead to overdose.

Anecdotal reports from RPU in the 2014 EDRS suggest that unlike in European countries, MDMA crystals are most commonly available in capsules, one capsule typically containing roughly 100mg of crystal.

It is unclear when this new form was introduced to Australian markets, however notable numbers of RPU first reported its use in the 2012 EDRS survey.

Unfortunately there are no available data sources looking at the chemical composition of crystals obtained, thus it cannot be guaranteed that the substance reported by participants contains only MDMA.

Figure 3: A capsule containing crystal MDMA



Drug Use Characteristics of Crystal MDMA Users

Twelve variables were selected (5 risk variables, 7 health variables) to be included in the analysis. The Benjamini-Hochberg procedure was used to control the false positive rate.

Only two variables were significant at the univariate level; participants who used crystal MDMA were more likely to have used more than 6 different drugs in the last six months and more likely to have used a new psychoactive substance (NPS).

When placed into a binary logistic regression, these variables remained significant.

Table 1: Univariate analyses of 12 variables comparing crystal MDMA and non-crystal MDMA users, EDRS 2014.

	Crystal (n=390) %	No-Crystal (n=410) %	p	OR
More than 6 drug types	55%	39%	p < .001*	1.939
Used drugs with ecstasy	86%	82%	p = .126	N/A
Binging behaviour	39%	33%	p = .054	N/A
Used an NPS in the last 6 months	60%	37%	p < .001*	2.466
Used illicit drugs weekly or more	39%	32%	p = .038	N/A
Reported Mental health problem	27%	28%	p = .566	N/A
High Psychological Distress (K10 > 20)	57%	55%	p = .515	N/A
Risky drinking behaviour (AUDIT > 10)	70%	72%	p = .651	N/A
Stimulant dependence (SDS > 3)	14%	19%	p = .031	N/A
Stimulant OD (Last 12 months)	22%	15%	p = .011	N/A
Depressant OD (Last 12 months)	12%	11%	p = .557	N/A
Self-reported drug problem	53%	49%	p = .281	N/A

Health Concerns

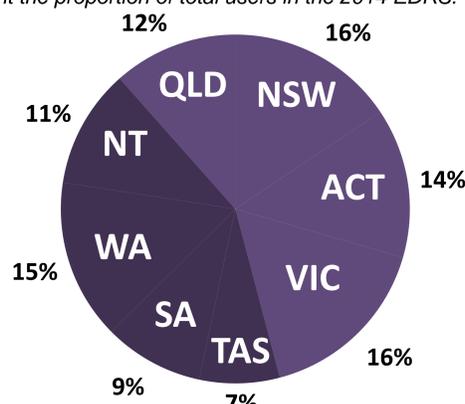
When appropriate critical values were selected, none of the health variables significantly predicted crystal MDMA users (table 1).

Specifically, crystal MDMA users did not report higher mental health prevalence or higher rates of high psychological distress, risky drinking or stimulant dependence. Furthermore, this user group did not report higher overdose rates or drug use problems.

It is important to remember that the vast majority of RPU in the 2014 EDRS sample were regular ecstasy users (90%) and almost all (96%) had used ecstasy at least once in the 6 months prior to survey. Thus it may be difficult to find health differences in the use of such a similar drug.

State Comparisons

Figure 4: State breakdown of crystal MDMA users. Percentages represent the proportion of total users in the 2014 EDRS.



Reports of use were evenly spread across all states. NSW and Victoria reported the highest proportion of crystal MDMA users and the eastern states accounted for the majority of users in Australia (figure 4).

Conclusion

Given the significant increase in the use of crystal MDMA in the 2014 EDRS sample, the current analysis looked at 12 risk and health variables to assess whether there were significant predictive factors for this specific group of users.

Only two variables were predictive of crystal MDMA users. People who use crystal MDMA are more likely to be broader drug users and more likely to have used an NPS.

Crystal MDMA is more potent and more quickly absorbed than pills or powder ecstasy. However when you have a more experienced sample of ecstasy users, the inflated effects of the drug may not necessarily increase the prevalence of negative health factors.