

# Choosing a Cut-Off on the Severity of Dependence Scale for Ecstasy Use

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## INTRODUCTION

Despite controversy about the potential for the development of dependence in relation to ecstasy [1], some people do experience problems with ecstasy use, and full case reports of dependence problems have been identified [2]. The Severity of Dependence Scale (SDS) is a brief, five-item screening instrument that has demonstrated validity in identifying cases of DSM cannabis, amphetamine, cocaine and benzodiazepine dependence. This study aimed to determine a cut-off score on the SDS that could provide a useful indication of individuals that are potentially ecstasy dependent according to DSM criteria.

## METHODS

Interviews were conducted as part of the Ecstasy and Related Drugs Reporting System, a surveillance system for the ecstasy market [3]. A total of 198 participants were recruited through a purposive sampling strategy. Inclusion criteria required participants to be at least 16, and to have used 'ecstasy' at least monthly in the preceding six months. Caseness (dependence) was assessed using the Composite International Diagnostic Interview (Short Form: CIDI-SF). This provided assessment of past-year DSM dependence symptoms, with the exception of withdrawal [4]. As some controversy exists over the status of the dependence syndrome for ecstasy [1], a conservative approach was adopted, whereby symptoms relating to lack of control over use (using in larger amounts or for longer than intended) and use interfering with role function were only scored positively if this occurred at least monthly in the preceding year. Diagnostic efficiency measures were calculated for each score on the SDS in identifying caseness.

## RESULTS

The sample had a mean age of 23 years (range 17-47), and 57% (95%CI 50-64) were male. Mean ecstasy use was 17 days of the past 180 (SD=14, range 6-100). None were engaged in drug treatment. Area under the curve for the receiver operating characteristic was 0.76 (95%CI: 0.66-0.85; nonparametric  $p < 0.001$ ), suggesting that the SDS has good diagnostic utility. The Youden index (sensitivity + specificity - 1) was used to identify an optimal cut-off, as the

maxima of this index represents the score that best balances sensitivity and specificity. This was apparent at an SDS value of 3, which correctly classified 73% of cases, and identified 63% of true cases while ensuring that only 25% of real non-cases were screened positive. To examine validity of the identified cut-off, participants were categorised into negative (SDS < 3; n=135) and positive (SDS ≥ 3; n=63) groups. Univariate logistic regression models demonstrated that those screened positive consumed ecstasy more frequently, in larger amounts, and in binge patterns, and reported greater rates of social and role responsibility problems relating to use. Those screened positive were also more likely to drive under the influence of ecstasy, engage in high-risk alcohol use and experience clinical levels of psychological distress.

## DISCUSSION AND CONCLUSIONS

Approximately one-fifth of this sample of regular ecstasy users were ecstasy dependent according to the DSM. This is comparable with studies of sentinel samples of ecstasy users internationally using different instruments [5-7]. This demonstrates that the experience of problems relating to ecstasy may be more common than would be expected on the basis of presentations to drug treatment – just 53 per million adult population in Australia in 2005/06, compared to 35,500 per million reporting recent ecstasy use [8] – and underscores the importance of screening for problems with use.

An SDS cut-off of 3 provides a good balance between sensitivity and specificity, and validly identifies individuals that are experiencing problems with their ecstasy use. For research applications, a more conservative cut-off (as high as 5) may be used to identify a more homogeneous group, but the lower cut-off is appropriate for clinical applications, particularly in light of the brevity of the SDS.

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