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The effect of the ecstasy 'come-down' on the diagnosis of ecstasy dependence

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ABSTRACT

Background: The existence of an ecstasy-dependence syndrome is controversial. We examined whether the acute after-effects of ecstasy use (i.e. the 'come-down') falsely lead to the identification of ecstasy withdrawal and the subsequent diagnosis of ecstasy dependence.
Methods: The Structured Clinical Interview for DSM-IV-TR Disorders: Research Version (SCID-RV) was administered to 214 Australian ecstasy users. Ecstasy withdrawal was operationalised in three contrasting ways: (i) as per DSM-IV criteria; (ii) as the expected after-effects of ecstasy (a regular come-down); or (iii) as a substantially greater or longer come-down than on first use (intense come-down). These definitions were validated against frequency of ecstasy use, readiness to change and ability to resist the urge to use ecstasy. Confirmatory factor analyses were used to see how they aligned with the overall dependence syndrome.
Results: Come-down symptoms increased the prevalence of withdrawal from 1% (DSM-IV criterion) to 11% (intense come-downs) and 75% (regular come-downs). Past year ecstasy dependence remained at 31% when including the DSM-IV withdrawal criteria and was 32% with intense come-downs, but increased to 45% with regular come-downs. Intense come-downs were associated with lower ability to resist ecstasy use and loaded positively on the dependence syndrome. Regular come-downs did not load positively on the ecstasy-dependence syndrome and were not related to other indices of dependence.
Conclusion: The acute after-effects of ecstasy should be excluded when assessing ecstasy withdrawal as they can lead to a false diagnosis of ecstasy dependence. Worsening of the ecstasy come-down may be a marker for dependence.

1. Introduction

An estimated 19 million people world-wide use ecstasy (United Nations Office on Drugs and Crime, 2013). One of the concerns about the wide-spread use of ecstasy is whether the drug can lead to dependence. Several epidemiological surveys have identified dependence among ecstasy users (Bruno et al., 2009; Cottler et al., 2009, 2001; Topp et al., 1997; Yen and Hsu, 2007). However, the rates of dependence reported seem at odds with infrequent use of the drug, casting doubt on the validity of the diagnosis (Topp et al., 1997). A key concern is whether the diagnosis of ecstasy dependence has been inflated by the inclusion of the acute after-effects of ecstasy (referred to as the 'come-down' or 'crash') as withdrawal symptoms (Degenhardt et al., 2010; Topp et al., 1997). The come-down reflects the acute recovery phase after using the drug, akin to an alcohol hangover, and distinct from the subsequent withdrawal syndrome (Gawin and Ellinwood, 1988). For psychostimulant drugs, this crash phase occurs within 1 to 3 days of use and it is characterised by dysphoria, depression, lethargy, irritability, anxiety, agitation, hyperphagia and hypersomnelence (Davison and Parrott, 1997; Gawin and Ellinwood, 1988; McGregor et al., 2005).

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Whether ecstasy use can lead to a withdrawal syndrome is controversial. Ecstasy (3,4–methylenedioxymethamphetamine) is classified as a hallucinogen in the Diagnostic and Statistical Manual of Mental Disorders, Fifth edition (DSM-5; American Psychiatric Association, 2000). The diagnosis of a hallucinogen disorder excludes withdrawal as a criterion because hallucinogen withdrawal has not been consistently documented in humans (American Psychiatric Association, 2000). However, ecstasy has both hallucinogenic and stimulant properties (Nichols, 1994), and stimulant dependence is accompanied by a withdrawal syndrome. Stimulant withdrawal is characterised by dysphoric mood (e.g. depression, irritability, anxiety) and accompanied by fatigue, insomnia and psychomotor agitation (American Psychiatric Association, 2000); the acute phase lasts for 7–10 days and residual symptoms can persist for several weeks (McGregor et al., 2005).

Self-reported withdrawal symptoms have been documented following ecstasy use in epidemiological studies (Yen and Hsu, 2007), but the extent to which these reports reflect the expected acute after-effects of ecstasy use (i.e., the come-down) is unclear (Topp et al., 1997). The acute come-down from ecstasy is characterised by the same symptoms as stimulant withdrawal (e.g., lethargy, moodiness, insomnia, depression, irritability, and paranoia; Davison and Parrott, 1997), and has a similar timeframe (several days) to the early phase of withdrawal, making it difficult to differentiate between the two conditions. For this reason, the acute phase of stimulant withdrawal manifests clinically as a more intense and longer stimulant come-down (McGregor et al., 2005). In line with this, many stimulant users report a worsening of the come-down symptoms over the course of their using history (Topp et al., 1997).

The gold standard for diagnosing ecstasy withdrawal and making a subsequent diagnosis of ecstasy dependence is the Structured Clinical Interview for DSM Disorders (SCID), a semi-structured interview delivered by an experienced clinician or trained mental health professional (First et al., 2002). However, most research that has been conducted on ecstasy withdrawal and dependence relies on instruments that can be delivered by lay-persons, such as the Composite International Diagnostic Interview (CIDI). While these type of instruments produce sufficiently valid prevalence estimates for most major psychiatric conditions (Haro et al., 2006), they rely on a set scripted questions, which removes the capacity for clinical judgement.

In the case of diagnosing ecstasy withdrawal, lay-administered diagnostic tools, such as the CIDI, are problematic in that they do not distinguish between the acute come-down from ecstasy use and the more lasting withdrawal syndrome. For example, the CIDI asks respondents whether they have experienced any symptoms indicative of withdrawal after they "stopped or cut down" on their use; this leaves open the possibility that symptoms occurred after a single episode of use (i.e. reflecting the acute come-down from using ecstasy). In contrast, the diagnosis of ecstasy dependence in the DSM-IV requires that stimulant withdrawal occurs after a period of heavy and prolonged use (American Psychiatric Association, 2000), which should avoid confounding by the acute after-effects of ecstasy among infrequent users of the drug. However, without this condition, come-down symptoms could contribute to the ecstasy withdrawal criterion, and could lead to a false diagnosis of ecstasy dependence. This could account for the seemingly high rates of dependence documented using the CIDI, such as the 59% lifetime prevalence found by Cottler and colleagues (Cottler et al., 2009): a finding that hinged on 68% of the sample reporting ecstasy withdrawal.

The aim of this study was to determine what impact the acute after-effects of ecstasy use (i.e., the come-down) have on the identification of ecstasy withdrawal and whether they falsely increase the number of people diagnosed with ecstasy dependence. To achieve this aim we examined the impact of using three different definitions of ecstasy withdrawal on the diagnosis of ecstasy dependence: (i) DSM-IV criteria; (ii) a regular come-down (any symptom of withdrawal experienced after using ecstasy); or (iii) an intense come-down (substantially greater or longer in duration than on first use). Each of these definitions of ecstasy withdrawal was validated against a diagnosis of ecstasy dependence that excluded the withdrawal criterion (as per a diagnosis of hallucinogen dependence) and other indicators of dependence (severity of ecstasy dependence on the Severity of Dependence Scale, frequency of ecstasy use, inability to resist the urge to use ecstasy and readiness to change). A confirmatory factor analysis was used to examine whether these definitions were aligned with the common single dimension underpinning the dependence syndrome.

2. Methods

2.1. Participants

Participants were 214 ecstasy users who were recruited to a multi-site group randomised controlled trial (the E-Checkup, n = 160) [Australia and New Zealand Clinical Trial Registry Number 12611000136909] and a randomised trial conducted at the University of New South Wales (n = 54) [Australia and New Zealand Clinical Trial Registry Number 12611000180910]. Both trials assessed the efficacy of a health intervention for ecstasy users. Inclusion criteria for both studies were being fluent in English, over 16 years of age (over 18 years of age for trial 12611000180910) and having used ecstasy three times in the past 90 days. Exclusion criteria for both studies were current moderate or severe dependence on other drugs (excluding cannabis and tobacco) as assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders–Research Version (SCID-RV;First et al., 2002), having received treatment for substance use in the past 90 days, and showing evidence of medical or cognitive impairment or severe psychiatric illness that would interfere with participation.

Recruitment took place between October 2009 and April 2012. Participants were recruited by advertisements in free street press and magazines, postings on social networking and help-seeking internet sites, referrals from treatment and other health services, and flyers in entertainment venues.

Data were collected at the baseline phase of the trial in a face-to-face interview conducted at the National Drug and Alcohol Research Centre, UNSW and the Institute of Health and Biomedical Innovation, Queensland University of Technology. Participants were reimbursed $25 for the interview. Interviewers were clinical psychologists or clinical psychology students who were trained on the SCID-RV by LH or MN. Ethics approval for the study was obtained from the Human Research Ethics Committees, University of New South Wales, Queensland University of Technology and relevant NSW Area Health Service institutional ethics committees.

2.2. Measures

2.2.1. Ecstasy dependence. Ecstasy dependence in the past year was assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders–Research Version (SCID-RV; First et al., 2002). The diagnosis of ecstasy dependence was initially made excluding the withdrawal criterion, as would be done for hallucinogen dependence. The diagnostic criteria were then adjusted to include the withdrawal criterion defined either according to the DSM-IV, as a regular come-down, or as an intense come-down.

2.2.2. Definitions of ecstasy withdrawal. Ecstasy withdrawal was assessed using the SCID-RV. Using the SCID-RV, the DSM-IV criteria for the withdrawal syndrome was operationalised as three or more symptoms characteristic of withdrawal after ceasing heavy and prolonged use of ecstasy (American Psychiatric Association, 2000). Heavy, prolonged use was defined as "multiple days of continuous use". As part of the SCID-RV interview, participants were instructed about the nature of ecstasy withdrawal symptoms. These symptoms included: autonomic hyperactivity; psychomotor agitation or retardation; insomnia or hypersomnia; fatigue; nausea, vomiting, or changes in appetite; transient visual, tactile, or auditory hallucinations or illusions; muscle aches; anxiety; vivid, unpleasant dreams; and dysphoria. Participants who endorsed at least one withdrawal symptom in SCID-RV but did not meet the criteria for DSM-IV withdrawal were classified as having a come-down. Participants were then asked whether the come-down that they experienced was "substantially greater or longer in intensity than on first use". Participants who indicated that their come-downs were substantially greater or more intense than on first use were classified has having an 'intense come-down' while those who did not were classified as having a 'regular come-down'.

2.2.3. Ecstasy use and severity of ecstasy dependence. Ecstasy use in the past 90 days was assessed using the Time Line Follow-Back (Sobell and Sobell, 1992). The Severity of Dependence Scale (Gossop et al., 1992) was used to assess severity of dependence on ecstasy in the past three months in addition to the SCID-RV.