Addictive Behaviors 38 (2013) 2465–2472

Contents lists available at SciVerse ScienceDirect

Addictive Behaviors

Coping style and ecstasy use motives as predictors of current mood symptoms in ecstasy users

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HIGHLIGHTS

- Relationships between ecstasy-use motives, coping and mood in ecstasy users
- Coping motives for ecstasy use are associated with depressive and anxiety symptoms.
- Emotion-focused coping is associated with depressive and anxiety symptoms.
- Emotion-focused coping mediates the relationship between trauma and mood symptoms.
- Emotion-focused coping moderates the relationship between stress and mood symptoms.

ARTICLE INFO

Keywords:
Ecstasy
Mood
Coping
Substance use motives
Trauma
Life stress

ABSTRACT

Background: Elevated depressive and anxiety symptoms during childhood and adolescence have been associated with greater risk of later ecstasy use. Ecstasy users have reported using ecstasy to reduce depression or worry, or to escape. While these findings suggest that some people use ecstasy as a form of self-medication, limited research has been conducted examining the relationship between affective symptoms, coping styles and drug use motives in ecstasy users. This cross-sectional study aimed to determine if coping style and/or ecstasy use motives are associated with current mood symptoms in ecstasy users.
Methods: A community sample ($n = 184$) of 18–35 year olds who had taken ecstasy at least once in the past 12 months completed self-report measures of depression, anxiety, ecstasy use motives and coping styles. Timeline followback methods were used to collect information on lifetime ecstasy, recent drug use and life stress. Trauma exposure was measured using the Composite International Diagnostic Interview—Trauma List.
Results: Coping motives for ecstasy use and an emotion-focused coping style were significantly associated with current depressive and anxiety symptoms. Emotion-focused coping mediated the relationship between a history of trauma and current anxiety symptoms and moderated the relationship between recent stressful life events and current depressive symptoms.
Conclusions: These findings highlight the importance of interventions targeting motives for ecstasy use, and providing coping skills training for managing stressful life events among people with co-occurring depressive/anxiety symptoms and ecstasy use.

1. Introduction

Population-based studies continue to indicate higher rates of ecstasy (3,4-methylenedioxymethamphetamine or MDMA) use in Australia, compared with international figures, including those observed in North America and Europe (UNODC, 2010). Ecstasy is particularly popular among young adults, with 1 in 9 (11.2%) 20- to 29-year olds in Australia having used ecstasy in the past 12 months (Australian Institute of Health and Welfare, 2008). Ecstasy is taken for its acute effects, including feelings of euphoria, increased energy, and greater sociability and connectedness with others (Cohen, 1995; White et al., 2006). However, ecstasy use has also been associated with the alleviation of negative mood states (Boys, Marsden, & Strang, 2001; White et al., 2006) and to cope with negative life situations (Moonzwe, Schensul, & Kostick, 2011).

Longitudinal studies indicate that depressive and anxiety symptoms in childhood and adolescence have been associated with ecstasy use in later adolescence and young adulthood (Huizink, Ferdinand, van der Ende, & Verhulst, 2006), and that the onset of mental disorders typically precedes the onset of ecstasy use (Lieb, Schuetz, Pfister, von Sydow, & Wittchen, 2002). Consequently, it has been suggested that elevated

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http://dx.doi.org/10.1016/j.addbeh.2013.05.005

rates of depressive and anxiety symptoms among ecstasy users relate to the use of ecstasy to cope with pre-existing mood symptoms (Huizink et al., 2006; Lieb et al., 2002). However, the relationship between depressive and anxiety symptoms and ecstasy use is likely to be complex, and there may be a number of possible explanations for this relationship. For example, ecstasy and other drug use may result in depressive and anxiety symptoms or exacerbate existing symptoms through biological and/or environmental mechanisms, such as serotonin neurotoxicity (McCann et al., 2008). Alternatively, lowered mood or anxiety may lead to the onset or continuation of substance use through self-medication (Huizink et al., 2006) and negative reinforcement due to short-term symptom relief (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004), while shared risk factors may increase the risk of both depressive and anxiety symptoms and ecstasy and other drug use among young people (Kessler, 2004; Merikangas, Risch, & Weissman, 1994).

Given the limited research in this area, we recently examined the relative contribution of known risk factors for depression, anxiety and substance use on the severity of depressive and anxiety symptoms in a community sample of 184 ecstasy users (Scott, Hides, Allen, Burke, & Lubman, 2010). We found that trauma exposure, recent life stress and other drug use factors (e.g., frequency of tobacco use and recent polydrug use), but not genetic or ecstasy use factors (e.g., lifetime and recent ecstasy use), were significant predictors of current depressive and anxiety symptoms. Specifically, a trauma history was a significant predictor of anxious arousal and recent life stress was significantly associated with anhedonic depression and general distress related to depression and anxiety. These results were consistent with MacInnes, Handley, and Harding's (2001) finding that life stress was associated with severity of depressive symptoms in a group of former ecstasy users. Another study found that young ecstasy users with a history of childhood abuse and neglect were more likely to experience clinically significant depressive symptoms and report a heavier pattern of polydrug use than ecstasy-naive drug using controls (Singer, Linares, Ntiri, Henry, & Minnes, 2004). Consistent with the self-medication hypothesis, it has been suggested that drugs are frequently used by people with substance use disorders and a history of trauma to alleviate negative mood states and trauma-related symptoms (e.g., hyperarousal) in the context of coping skills deficits (Staiger, Melville, Hides, Kambouropoulos, & Lubman, 2009; Stewart & Conrod, 2003).

However, the relationship between coping styles and mood symptoms among ecstasy users is yet to be investigated. Coping refers to the way a person manages or responds to a stressful event (Lazarus & Folkman, 1984). Research has consistently found that greater engagement in task-focused coping (e.g., problem solving) is negatively associated with psychological distress, while greater reliance on emotion-focused coping, which relates to managing or regulating one's emotional response to a stressful event (e.g., worrying, blaming oneself), has been associated with poorer psychological and behavioral adjustment, including depression and anxiety (Endler & Parker, 1994; McWilliams, Cox, & Enns, 2003) and substance use (Cooper, Russell, & George, 1988; Staiger et al., 2009). Although the degree to which people engage in these coping styles and their relative utility can vary across different situations, the use of an emotion-focused or avoidant coping style (e.g., mental and behavioral disengagement) following trauma exposure has been found to increase risk of psychological symptoms (Gil, 2005; Spaccarelli, 1994). There are no known studies looking at the general coping styles of ecstasy users, and in particular, whether coping style can help us understand the relationship between trauma/stressful life events and current mood symptoms in this population.

Research is also yet to examine the relationship between motives for ecstasy use and mood symptoms. Consistent with the self-medication hypothesis (Khantzian, 1997), a significant number of ecstasy users report using ecstasy to feel better when down or depressed, to reduce worry, or to escape (Boys et al., 2001; Ter Bogt & Engels, 2005; White et al., 2006). Ter Bogt and Engels (2005) examined ecstasy use motives and consequences of ecstasy use among rave attendees. Data from the ecstasy users in their sample ($n = 372$) indicated that the most common motives for ecstasy use were increased energy and euphoria, followed in decreasing order by sociability/flirtatiousness, sexiness, coping, self-insight and conformity. Motives were related to the extent of ecstasy use and self-reported consequences of use. Specifically, high scores on the euphoria and sexiness motives were associated with heavier ecstasy use in the overall sample. More negative effects from ecstasy use were reported among females who used ecstasy to forget their problems and males who used ecstasy to conform with their friends. Indeed, drug use aimed at alleviating negative mood states (coping motives) has been associated with greater frequency and quantity of drug use, psychopathology, and substance-related problems (Boys & Marsden, 2003; Brodbeck, Matter, Page, & Moggi, 2007; Redman, 2008). Furthermore, coping motives have been associated with a history of stressful and traumatic life events (Brodbeck et al., 2007; Moonzwe et al., 2011; Redman, 2008) and have been found to mediate the relationship between childhood abuse and neglect and substance use problems (Grayson & Nolen-Hoeksema, 2005; Schuck & Widom, 2001). Together, these findings indicate that individuals with a history of trauma may be more likely to (ab)use substances in order to self-medicate aversive symptoms (Stewart & Conrod, 2003) and in turn may be more vulnerable to substance-related harm.

The current study aimed to 1) determine if coping style and/or ecstasy use motives are associated with current depressive and anxiety symptoms in a community sample of ecstasy users, and 2) investigate whether ecstasy use motives and coping style help explain the associations between environmental risk factors (trauma and life stress) and current mood symptoms found in our previous study (Scott et al., 2010). It was hypothesized that 1) coping motives and emotion-focused coping would be associated with current depressive and anxiety symptoms, 2) coping motives and emotion-focused coping would mediate the relationship between trauma and current anxious symptoms, and 3) coping motives and emotion-focused coping would moderate the relationship between recent life stress and current depression and anxiety symptoms.

2. Material and methods

2.1. Participants

The method has been described in detail elsewhere (Scott et al., 2010). Briefly, 190 participants aged between 18 and 35 who had taken ecstasy at least once in the last 12 months were recruited from the community in Melbourne, Australia. Participants were recruited through advertising at local universities, a national dance music website, a local newspaper, a free street music magazine, and the distribution of flyers at cafes, music stores, and dance music events. 'Snowballing' techniques were also used (Solowij, Hall, & Lee, 1992). Exclusion criteria were current pregnancy, lack of English fluency and a history of a psychotic disorder, as required for the larger investigation involving these participants.

2.2. Measures

2.2.1. Substance use

Participants provided substance use information including age at first use, most frequent use (never used, less than monthly, monthly, 2–3 times a month, weekly, daily or almost daily) of alcohol, tobacco, cannabis, amphetamines, cocaine, hallucinogens, inhalants, opiates, benzodiazepines/sedatives, ketamine, and gamma-hydroxybutyric acid (GHB). The total number of substances consumed was used as a measure of lifetime polydrug use (maximum possible score = 12). A context-based timeline method was used to estimate total lifetime number of ecstasy pills consumed (Bedi & Redman, 2006). Recent frequency and quantity of drug use were assessed using the Timeline Followback for the preceding 28 days (TLFB; Sobell & Sobell, 1992).