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People with bipolar I disorder report avoiding rewarding activities and dampening positive emotion

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ABSTRACT

Background: Researchers have linked bipolar disorder to elevations in reward sensitivity and positive affect. Little is known, however, about how people with bipolar disorder respond to rewards and positive affect and how these tendencies relate to functioning or quality of life.
Methods: Persons diagnosed with bipolar I disorder and matched controls completed the Responses to Positive Affect (RPA) measure and the Brief Quality of Life in Bipolar Disorder scale. Bipolar participants also completed the Reward Responses Inventory, which we designed to assess the extent to which participants avoid rewarding activities to prevent mania. A subsample of participants with bipolar disorder completed a positive mood induction procedure to examine the validity of the Response to Positive Affect scale.
Results: The majority of bipolar participants reported avoiding at least one rewarding activity as a means of preventing mania. In addition, people with bipolar I disorder reported more dampening responses to positive affect than did control participants. Dampening positive emotions was related to lower quality of life.
Limitations: This study does not address whether responses to affect and reward are related to the longitudinal course of symptoms.
Conclusions: These findings suggest that people with bipolar I disorder seem to be aware of the potential of goal achievements to trigger mania, and many people with bipolar disorder seem to take steps to avoid positive emotion and reward.

1. Introduction

Persons diagnosed with bipolar I disorder face a dilemma when trying to prevent manic episodes. Mania is characterized in part by intense positive emotion, and in the past two decades, research has revealed the role of goal pursuit and achievement in the onset of mania, as we review below. These facts highlight the predicament faced by those who suffer from bipolar disorder: while seeking the same positive experiences and achievements that we all pursue, people with bipolar disorder must simultaneously view these experiences as signs that they may be heading into a manic episode. On one hand is the possibility of mania, which will disrupt many aspects of their lives. But the alternative is also unpleasant—disengagement from the positive emotions and goal pursuits that people value so highly.

The study reported here was designed to examine how people with bipolar I disorder respond to positive emotions and rewarding activities. We begin by briefly reviewing research on two topics: the first is the roles of reward sensitivity and positive emotionality in mania. The second is mania prevention strategies among persons with bipolar I disorder.

Prior studies have found that reward sensitivity is stably elevated through periods of remission in bipolar I disorder (Meyer et al., 2001) and in college students at risk of hypomania (Meyer et al., 1999). This elevation in reward sensitivity has been found to be a trait-like feature of persons with bipolar disorders (Meyer et al., 2001). However, changes in the activity of this system, such as temporarily increased goal pursuit, can facilitate the onset of manic symptoms (Johnson, 2005). For example, life events that involve goal attainment precede the onset of manic symptoms in bipolar I disorder (Johnson et al., 2000;

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Johnson et al., 2008b) and bipolar spectrum disorders (Nusslock et al., 2007). Increased involvement in the pursuit of goals prospectively relates to longitudinal increases in manic symptoms (Lozano and Johnson, 2001), and has been used as a prodromal sign of an impending manic episode (Lam and Wong, 1997; Molnar et al., 1988). Trait-like elevations in positive emotionality are also associated with a more severe course of mania (Gruber et al., 2008, 2009) and have been used on screening scales for manic temperament (Akiskal et al., 2005). Further, people with bipolar I disorder commonly report short-term increases in positive affect as early signs of mania (Molnar et al., 1988; Smith and Tarrier, 1992).

People diagnosed with bipolar disorder report responding in diverse ways when experiencing early signs of mania. Lam et al. (2001) classified the responses into three broad categories: Modifying Excessive Behavior (e.g., reducing the number of tasks to a more realistic amount), Early Medical Intervention (e.g., seeing a doctor), and Stimulating Strategies (e.g., enjoying the feeling of high). At 18-month follow-up, Modifying Excessive Behavior was related to decreases in manic symptoms, whereas engaging in Stimulating Strategies was related to increases in manic symptoms.

These studies focused on coping responses after symptoms emerged. The current study extends this work by asking about responses to reward and positive affect in general, not just after symptoms have emerged. Given the evidence that increases in goal engagement and positive mood states during remission can precede the development of manic symptoms, how do people with bipolar disorder respond to these states?

Research outside bipolar disorder has suggested that there are strong individual differences in propensities to amplify or diminish positive emotion. Emotion-amplifying responses (e.g., thinking about how happy one feels) are aimed at maintaining or enhancing the experience of positive emotion (cf. Bryant, 1989; Feldman et al., 2008). In contrast, dampening responses (e.g., thinking "this will never last") act to diminish positive emotion (Quoidbach et al., 2010; Wood et al., 2003). In normal samples, use of positive-emotion amplifying responses relates to higher well-being, and dampening responses correlate with low self-esteem, depression, and poorer well-being (Quoidbach et al., 2010).

Researchers have begun to examine these responses among people with bipolar spectrum disorders. Although people at risk of and diagnosed with bipolar spectrum disorder have reported frequent use of emotion-amplifying strategies in comparison with control participants (Feldman et al., 2008; Johnson et al., 2008a; Raes et al., 2010), the available studies have been limited in that researchers have not included participants with bipolar I disorder, and only bipolar I disorder is defined by impairment as a consequence of high moods. People suffering from bipolar I disorder may have an incentive to reduce positive affect compared with those diagnosed with milder forms of disorder. This may lead to a different pattern of responses.

Moreover, beyond responses to positive affect, we noted above that goal engagement predicts increases in manic symptoms and is often described as one of the early signs of mania. Thus, persons at risk for mania may have an incentive to avoid rewarding activities in order to prevent mania. To examine this possibility, we developed a new questionnaire, the Reward Responses Inventory (RRI), to assess the extent to which persons with a history of mania view goal accomplishments as potential triggers of mania and report avoiding rewarding activities in an effort to prevent mania.

If people with bipolar disorder avoid rewarding activities and dampen positive emotion, it is important to consider how these behaviors relate to quality of life among people with bipolar disorder. On one hand, it is possible that down-regulation of positive emotion is associated with lower well-being in people with bipolar disorder just as it is in people without the disorder (Quoidbach et al., 2010). On the other hand, if these strategies prevent mania, their use may be associated with increased quality of life. Understanding variation in quality of life is a particularly important goal in the study of bipolar disorder, which is associated with lower average quality of life and general functioning but also with a great deal of variation in quality of life (Hammen et al., 2000; Harrow et al., 1990).

This study examined self-reports of avoidance of rewarding activities and dampening of positive emotions. We hypothesize that bipolar I disorder will be related to high levels of both avoidance of rewarding activities and dampening of positive emotions. We also examined whether reward avoidance and dampening would help explain lower quality of life observed in bipolar disorder in the context of individual differences in severity of illness history and neuroticism.

2. Method

2.1. Participants

The participants were 90 persons who met criteria for bipolar I disorder, as assessed by the Structured Clinical Interview for DSM-IV (SCID) for axis I disorders, and 72 control participants. Participants were community members from the Miami and Palo Alto areas recruited through advertisements placed in newspapers, flyers, online, and in public transportation sites.

Participants in the bipolar group met diagnostic criteria for bipolar I disorder, and those in the control group did not meet lifetime or current criteria for any mood disorder (including bipolar I disorder, bipolar II disorder, cyclothymia, bipolar disorder NOS, major depressive disorder, or depressive disorder NOS). All participants were native English speakers between 18 and 65 years of age. Participants were excluded if they met diagnostic criteria for substance abuse or dependence in the past year, primary psychotic disorder, a general medical condition of the central nervous system, vascular disease, degenerative disorder, a history of serious head injury, or any developmental disability or language problems that could interfere with understanding of the informed consent procedure or the study tasks and measures. Because traditional antipsychotics blunt reward sensitivity and positive affect (Abler et al., 2007), participants who were prescribed traditional antipsychotic medications were excluded. Bipolar I and control participants were matched on age and gender.

Participants completed written informed consent procedures and received compensation for their participation. All measures and procedures were approved by the institutional review boards at the University of Miami and Stanford University.

Potential participants who contacted study staff were screened by phone to determine possible diagnosis of bipolar I disorder and review demographic and medical exclusion criteria. After potential eligibility was determined, participants were invited to the University of Miami or Stanford University for a more detailed diagnostic interview. Once diagnostic measures were completed, participants completed symptom severity interviews. Bipolar participants were assessed only after achieving symptom remission. If participants with bipolar disorder achieved scores reflecting moderate symptoms (7 or higher on the Modified Hamilton Rating Scale for Depression or 6 on the Bech Rafaelsen Mania Scale), they were scheduled for monthly interviews to track symptom remission. Symptom severity interviews were repeated within two days of the questionnaire battery to ensure that symptoms remained in remission.