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Extreme attributions predict transition from depression to mania or hypomania in bipolar disorder

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ABSTRACT

Background: Relatively little is known about psychological predictors of the onset of mania among individuals with bipolar disorder, particularly during episodes of depression. In the present study we investigated attributional style as a predictor of onset of hypomanic, manic or mixed episodes among bipolar adults receiving psychosocial treatment for depression. We hypothesized that "extreme" (i.e., excessively pessimistic or optimistic) attributions would predict a greater likelihood of developing an episode of mood elevation.

Method: Outpatients with DSM-IV bipolar I or II disorder ($N = 105$) enrolled in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) were randomly allocated to one of three types of intensive psychotherapy for depression or a brief psychoeducational intervention. Patients completed a measure of attributional style at baseline and were followed prospectively for up to one year. All analyses were by intent to treat.

Results: Logistic regressions and Cox proportional hazards models indicated that extreme (both positively- and negatively-valenced) attributions predicted a higher likelihood of (and shorter time until) transition from depression to a (hypo)manic or mixed episode ($ps < .04$), independent of the effects of manic or depressive symptom severity at baseline. Extreme attributions were also retrospectively associated with more lifetime episodes of (hypo)mania and depression ($ps < .05$).

Conclusions: Evaluating extreme attributions may help clinicians to identify patients who are at risk for experiencing a more severe course of bipolar illness, and who may benefit from treatments that introduce greater cognitive flexibility.

1. Introduction

Bipolar disorder is characterized by periods of depression and/or hypomania/mania, and is associated with substance abuse, poor family functioning (e.g., high rates of divorce), high rates of suicide, and impairment in academic and work achievement (Angst et al., 2002; Goldberg and Burdick, 2008; Goodwin and Jamison, 1990; Grant et al., 2004; Kessler et al., 2006; Martínez-Arán et al., 2004; Nusslock et al., 2007). Individuals with bipolar disorder often experience a course of illness that is highly recurrent (Perlis et al., 2006) and is characterized by frequent mood episodes (Nierenberg et al., 2010). Given the wide variability in the course of bipolar disorder between individuals

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(Johnson and Meyer, 2005), identifying predictors of which individuals are at higher risk of experiencing a more severe course of illness (e.g., more frequent mood episodes) has significant implications for public health care.

Recent research has focused on psychosocial factors that may be associated with the course of illness in bipolar disorder (Alloy et al., 2009; Johnson and Meyer, 2005). For instance, the behavioral approach system (BAS; Depue and Iacono, 1989) is a motivational system underlying approach to rewards that is hypersensitive in bipolar disorder (Alloy and Abramson, 2010), and that may contribute to the occurrence of episodes of mood elevation when excessively activated (Urosević et al., 2008). Consistent with this perspective, the tendency to pursue difficult-to-obtain goals, in combination with elevated mood reactivity in response to cues of success and reward, may underlie the ascent to mania in bipolar disorder (Johnson, 2005; Johnson et al., 2012; Mansell and Pedley, 2008).

In addition, researchers have suggested that individuals with bipolar disorder often make extreme appraisals about the personal meaning of elevated internal states, which may provoke exaggerated attempts to control elevated mood resulting in maintenance or exacerbation of mood elevation (Mansell et al., 2007). Consistent with this hypothesis, individuals with bipolar disorder have been demonstrated to have high levels of extreme (conflicting positive and negative) appraisals of internal mood states compared to individuals with major depressive disorder and healthy controls (Kelly et al., 2011; Jones et al., 2006; Mansell et al., 2011). Furthermore, these appraisals predicted increases in symptoms of mood elevation and depression (Dodd et al., 2011).

Although major life events often precipitate mood episodes (e.g., Johnson et al., 2008), not all individuals with bipolar disorder experience episode recurrence following life events. Thus, mood disorders research has evaluated whether the attributions people make about the causes of life events indicate which individuals are most vulnerable to experiencing mood symptoms following life events. Individuals with a pessimistic attributional style have a tendency to attribute the causes of negative events to internal, stable, and global causes, and to attribute the causes of positive events to external, unstable, and specific causes, making them vulnerable to experiencing depression following stressful life events (Abramson et al., 1978). In contrast, individuals with more optimistic attributional styles tend to attribute the causes of negative events to external, temporary, and specific causes, and to attribute the causes of positive events to internal, stable, and global causes, making them resilient in the face of ordinarily depressogenic life events (Abramson et al., 1978; Needles and Abramson, 1990).

Previous studies have demonstrated the utility of attributional style in identifying individuals at risk for developing unipolar depression (Alloy et al., 2008, 2006a; Sweeney et al., 1986), as well in predicting fluctuations in depressive symptoms among individuals with bipolar spectrum disorders (Alloy et al., 1999; Johnson and Fingerhut, 2004; Reilly-Harrington et al., 1999). Although attributional style is measured with a continuous scale, several studies have also found that extreme responses on self-report measures of cognition (e.g., indicating "totally agree" or "totally disagree") predict greater likelihood of relapse in unipolar depression (Beevers et al., 2003; Peterson et al., 2007; Teasdale et al., 2001). In a recent study of adults with bipolar depression, extreme attributions about the causes of life events (made at the "pessimistic" or "optimistic" ends of the scales for internality, stability, and/or globality of causal inferences) were also associated with a lower likelihood of recovery and longer time until recovery from depression (Stange et al., 2013). Interestingly, both extremely *pessimistic* and extremely *optimistic* attributions predicted lower likelihood of recovery, indicating that the valence of attributions may be less important than their extremity in predicting recovery from depression.

Few prospective studies have evaluated attributional style as a predictor of mood elevation in bipolar disorder. One study of individuals with bipolar spectrum disorders demonstrated that both *pessimistic* and *optimistic* attributional styles predicted increases in hypomanic symptoms (Alloy et al., 1999; Reilly-Harrington et al., 1999). However, these studies were limited by small sample sizes and sub-threshold bipolar samples. Moreover, no studies to date have evaluated extreme attributional styles as predictors of mood elevation. For example, it is possible that bipolar individuals who make definitive negative or positive appraisals about the causes of events (e.g., "I'm a total failure," or "I'm the best at everything") are vulnerable to experiencing mood reactivity, and hence may be risk for episodes of mania as well as depression.

In the present study, we evaluated attributional style and extreme attributions as predictors of the onset of episodes of mania, hypomania, or mixed episodes among adults with bipolar depression who were taking part in a randomized, controlled trial in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). We hypothesized that extreme optimistic and pessimistic attributions would predict a greater likelihood of, and shorter time until, the onset of episodes of mood elevation. We also hypothesized that extreme pessimistic attributions would be associated with a history of more major depressive episodes, but that extreme optimistic attributions would be associated with a history of more episodes of mood elevation.

2. Method

2.1. Study design and participants

Participants were 105 depressed patients with DSM-IV bipolar I (62%) or II (38%) disorder from the 293 outpatients enrolled in the randomized, controlled clinical trial (Miklowitz et al., 2007) that compared the efficacy of intensive psychotherapies and collaborative care treatment as part of the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD; Miklowitz et al., 2007). This subsample of participants was selected because they had completed a measure of attributional style before the first therapy visit. STEP-BD was a naturalistic multi-center study of the effectiveness of treatments for bipolar disorder (Sachs et al., 2003; Miklowitz et al., 2007). Inclusion criteria for the randomized controlled psychosocial intervention trial for depression that was embedded within the context of STEP-BD included meeting DSM-IV criteria for bipolar I or II disorder with a current major depressive episode but not meeting the criteria for a mixed episode or depression not otherwise specified, being 18 years of age or older, not currently undergoing psychotherapy or being willing to taper non-study psychotherapy sessions to one or fewer per month, current treatment with a mood stabilizer, speaking English, and being willing and able to give informed consent. Exclusion criteria were being pregnant or planning pregnancy in the next year, a history of intolerance, nonresponse, or contraindication to bupropion or paroxetine, requiring dose changes in antipsychotic medications, or requiring immediate treatment for a DSM-IV substance or alcohol use or dependence disorder (Miklowitz et al., 2007). All participants provided institutional review board-approved informed consent to participate.

The present study evaluated a subsample of 105 patients from the psychosocial intervention trial who completed a measure of attributional style (the Attributional Style Questionnaire [ASQ]; Peterson et al., 1982) prior to the first psychosocial treatment session (see Table 1). Our subsample did not differ from the full sample on