

Dysfunctional Attitudes and Cognitive Schemas in Bipolar Manic and Unipolar Depressed Outpatients

Implications for Cognitively Based Psychotherapeutics

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Abstract: Dysfunctional thought patterns are presumed to underlie cognitive biases in mood disorder patients. However, few studies have compared dysfunctional thought patterns in bipolar manic and unipolar depressed patients. Cognitive schemas and dysfunctional attitudes were evaluated using the cognitive checklist for mania and Dysfunctional Attitudes Scale (DAS) in 34 bipolar manic, 35 unipolar depressed, and 29 nonpsychiatric control subjects. Unipolar depressed subjects had significantly higher total DAS scores and subfactor scores as compared with nonpsychiatric controls, whereas bipolar patients had intermediate scores between both groups. Significant correlations emerged between cognitive checklist for mania total and subcomponent scores and the DAS (total, performance subfactor, and approval subfactor scales) for the bipolar, but not the unipolar or nonpsychiatric control groups. Core beliefs among bipolar patients appear negativistic during manic phases, potentially reflecting an overcompensation for depression. The findings support clinical approaches targeting depressive cognitions regardless of the presence of manic symptoms.

Key Words: Bipolar disorder, cognition, dysfunctional attitudes, psychotherapy.

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Cognitive theories of depression have begun to investigate potential differences between bipolar and unipolar patients with regard to core patterns of thinking. Although

constructs involving hopelessness and negative automatic thoughts remain central to cognitive models of depression, less is known about points of overlap or divergence in these areas between bipolar and unipolar disorders. Individuals with bipolar and unipolar disorders seem to share cognitive biases such as all-or-none thinking or internal attributions for causality (Alloy et al., 1999; Reilly-Harrington et al., 1999). However, debate persists about the extent to which core beliefs among individuals with bipolar or unipolar disorders likely represent enduring trait phenomena or may vary longitudinally as a function of affective polarity (Leahy, 1999) or environmental stressors (Reilly-Harrington et al., 1999). Hence, further efforts are needed to better characterize and refine features involving cognitive distortions in bipolar versus unipolar disorders.

Dysfunctional attitudes have been closely linked with cognitive schemas (Sheppard and Teasdale, 2000), the latter defined as frameworks to help organize and interpret information. Some authors have reported higher levels of dysfunctional attitudes in euthymic bipolar patients relative to healthy control subjects (Scott et al., 2000), or in euthymic or hypomanic bipolar patients relative to unipolar depressed patients (Scott and Pope, 2003). On the other hand, Lam et al. (2004) recently found no differences between bipolar and unipolar depressed patients in total scores on a short 24-item version of the Dysfunctional Attitudes Scale (DAS; Power et al., 1994) or among DAS subfactors derived from a principal components analysis. In a subgroup of nonsyndromal subjects from that study, bipolar patients scored significantly higher than unipolar patients on the DAS goal attainment subfactor.

Further clarification of differences between bipolar and unipolar depressed patients in dysfunctional attitudes and cognitive schemas may help to differentiate core cognitive differences between these groups, and enhance understanding about the potentially unique psychotherapeutic targets for each respective disorder. Hence, the goal of the present study was to assess the relationship between dysfunctional attitudes and cognitive schemas in bipolar manic and unipolar depressed outpatients. We hypothesized that dysfunctional attitudes would be associated with negative core beliefs in both bipolar manic and unipolar depressed patients, and that both diagnostic groups would express higher levels of each construct as compared with normal control subjects.

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METHOD

The study group was comprised of 34 bipolar manic, 35 unipolar depressed, and 29 nonpsychiatric control subjects derived consecutively from the Bipolar Disorders Research Clinic of the New York Presbyterian Hospital. Research diagnoses were made by a senior research psychiatrist (J.F.G.) based on data obtained from the Structured Clinical Interview for the DSM-IV (First et al., 1997) and administered by trained and experienced senior research assistants with at least a masters' degree level of training in psychology. All affective disorder subjects were inpatients or outpatients and none was psychotic at the time of assessment.

Subjects underwent a comprehensive clinical assessment to obtain information about illness characteristics, as part of a larger protocol studying psychopathology features in bipolar disorder. Included in this assessment were (a) the 40-item DAS (Weissman and Beck, 1978), which included subscales for performance evaluation and for approval by others as described by Beck et al. (1993); and (b) the cognitive checklist for mania (CCL-M; Beck et al., 2006; Goldberg et al., 2005). The latter instrument, used to operationally define cognitive schemas in the current study, is a validated 61-item self-report measure developed by Beck et al. The CCL-M assesses cognitive beliefs in 7 subcomponent areas: (a) "myself" (reflecting exaggerated self-importance), (b) "relationships" (assessing grandiosity in relationships), (c) "spending or investing" (reflecting attitudes toward money and spending), (d) "excitement" (measuring risk-seeking), (e) "frustrations" (measuring low tolerance for thwarting or opposition), (f) "activity" (reflecting activity and energy level), and (g) "past/future" (assessing hyperpositive memories and expectations). Subjects are asked to check the extent to which each thought or belief corresponding to these domains has been present for themselves in general. Psychometric validation of the CCL-M has been described by Goldberg et al. (2005). CCL-M domain subscores for the present study group have previously been reported (Goldberg et al., 2005); the current report differs from and extends those prior findings by examining correlations among CCL-M and DAS scores across diagnostic groups. Variants of the CCL-M

that were developed to assess major depression and anxiety disorders also have previously been described and psychometrically validated (Beck et al., 1987).

Affective symptoms at the time of assessment were rated using the 24-item Hamilton Rating Scale for Depression (HAM-D; Hamilton, 1960) and the Young Mania Rating Scale (Young et al., 1978), administered by the authors. Adequate inter-rater reliability was obtained on each measure ($K > 0.90$).

All subjects provided written informed consent to participate in the study, which was approved by the Institutional Review Board of the Weill Medical College of Cornell University.

Mean group differences were examined using Mann-Whitney tests (in the case of 2 groups) and analysis of variance (in the case of 3 groups). Dichotomous variables were analyzed using chi square tests. Associations between 2 continuous variables were examined using Pearson correlations. Linear regression analysis, with post hoc Tukey comparisons, was used to examine the strength of association between DAS scores and CCL-M scores while controlling for potential intervening variables (i.e., manic and depressive symptoms). All statistical tests were 2-tailed with an [α] level of 0.05.

RESULTS

Characteristics for the 3 study groups are summarized in Table 1. As shown in the table, the bipolar manic and unipolar depressed groups were similar in age and lifetime illness duration. As expected, the outpatient bipolar manic subjects showed a moderate degree of manic symptom severity based on the YMRS, with relatively low levels of depressive symptoms as measured by HAM-D scores. The unipolar depressed group showed moderately high levels of depressive symptom severity without salient features of mania.

To examine potential differences across DAS scores across diagnostic groups, while controlling for age (based on observed univariate group differences) and current manic or depressive symptoms, we conducted a multiple linear regression analysis using DAS scores as the dependent variable and

TABLE 1. Sample Characteristics

Variable	Unipolar-Depressed (<i>n</i> = 35)	Bipolar/Manic (<i>n</i> = 34)	Nonpsychiatric Controls (<i>n</i> = 29)	<i>F</i> (<i>df</i>)	χ^2 (<i>df</i>)	<i>p</i>
Mean (<i>SD</i>) age	43.5 (11.7)	42.7 (12.3)	33.4 (14.8)	4.654 (2.95)	—	0.012
Mean (<i>SD</i>) years education	15.9 (3.0)	15.7 (3.2)	16.5 (1.8)	1.599 (2.93)	—	0.208
Mean (<i>SD</i>) age at 1st episode	23.8 (15.2)	18.6 (8.1)	—	—	—	0.862 ^a
Mean (<i>SD</i>) HAM-D	24.1 (4.3)	5.3 (3.0)	0.7 (1.0)	490.426 (2.92)	—	<0.001
Mean (<i>SD</i>) YMRS	2.0 (1.7)	22.6 (5.0)	0.7 (1.0)	493.071 (2.95)	—	<0.001
Gender						
% Female	69%	56%	72%	—	2.14 (1)	0.342
% Male						
Race						
% Caucasian	69%	56%	72%	—	2.45 (1)	0.294
% Non-Caucasian						

^aMann-Whitney *U* test.

5 independent variables: age, bipolar manic diagnosis, unipolar depressed diagnosis, HAM-D score, and YMRS score. The resulting model yielded an overall R^2 of 0.28. Significant associations were observed between DAS scores and YMRS scores ($\beta = 0.508$, $t = 2.216$, $p = 0.030$), but not HAM-D scores ($\beta = 0.437$, $t = 1.247$, $p = 0.217$), age ($\beta = -0.006$, $t = -0.057$, $p = 0.954$), a diagnosis of bipolar mania ($\beta = -0.372$, $t = -1.649$, $p = 0.104$), or unipolar depression ($\beta = 0.046$, $t = 0.120$, $p = 0.904$).

Mean (*SD*) DAS scores were higher among unipolar depressed [147.5 (42.6)] than bipolar manic [121.0 (36.8)] or nonpsychiatric control [108.1 (20.8)] subjects [$F = 8.862$, $df = 2.73$, $p < 0.001$; post hoc pair-wise comparisons: unipolar > bipolar; unipolar > control; bipolar > control ($p < 0.001$)]. Similar differences were observed in the DAS performance evaluation subfactor scale (Beck et al., 1993) [for unipolar depressed subjects: mean (*SD*) = 54.8 (19.0); bipolar manic: 41.3 (17.4); nonpsychiatric control: 33.9 (10.7); $F = 11.62$, $df = 2.73$, $p < 0.001$; post hoc pair-wise comparisons: unipolar > bipolar ($p < 0.013$); unipolar > nonpsychiatric controls ($p < 0.001$)]. This pattern also was evident for the DAS approval by others subfactor scale (Beck et al., 1993), but differences among diagnostic groups were not statistically significant [mean (*SD*) for unipolar depressed subjects = 41.5 (13.4); for bipolar manic = 36.6 (14.1); for nonpsychiatric controls = 34.9 (7.6); $F = 2.279$, $df = 2.75$, $p = 0.109$].

Associations Between Dysfunctional Attitudes and Cognitive Schemas

Pearson correlations between DAS and CCL-M scores for the bipolar-manic and unipolar-depressed patients are presented in Table 2. For the bipolar-manic group, overall CCL-M scores were highly and significantly associated with DAS scores, with significant associations evident in 4 of the 7 CCL-M domains (“spending,” “excitement,” “frustration,” and “activity.”) By contrast, among the unipolar-depressed subjects, no significant associations emerged between DAS scores and either total CCL-M scores or any CCL-M subcomponent measures.

TABLE 2. Correlations Between Dysfunctional Attitudes Scale (DAS) and Cognitive Checklist for Mania (CCL-M) Domains Across Diagnostic Groups

CCL Domain	Unipolar/Depressed (<i>n</i> = 35)	Bipolar/Manic (<i>n</i> = 34)	Control (<i>n</i> = 29)
Myself	-0.26	0.27	-0.01
Relationships	0.05	0.41	-0.16
Spending	-0.05	0.47*	-0.12
Excitement	-0.09	0.46*	0.06
Frustration	0.31	0.62**	-0.07
Active	-0.05	0.48*	0.25
Past/future	-0.31	0.18	0.14
CCL-M total	0.01	0.60*	0.09

* $p < 0.05$.
** $p < 0.01$.

DISCUSSION

The delineation of core beliefs and attitudes characteristic of bipolar versus unipolar patients has only recently begun to receive empirical study. The present findings indicate relatively extensive dysfunctional attitudes among bipolar manic patients, at a level that seems intermediate between those seen in unipolar depressed versus normal control subjects. Moreover, dysfunctional attitudes were highly correlated with negativistic cognitive patterns for the bipolar manic but not unipolar depressed patients or normal controls. Strikingly, despite the substantial severity of manic symptoms in the current bipolar group, dysfunctional schemas were highly prevalent even in the absence of salient depressive symptoms.

The present findings are consistent with previous observations by Scott and Pope (2003) indicating more pervasive dysfunctional attitudes among remitted or hypomanic bipolar patients as compared with unipolar depressed subjects, or with healthy control subjects (Scott et al., 2000). They contrast with reports of similarities in dysfunctional attitudes between unipolar and bipolar patients (Hollon et al., 1986; Lam et al., 2004). Extending this general line of inquiry, the current data further indicate strong links between dysfunctional attitudes and cognitive schemas among bipolar manic but not unipolar depressed subjects.

Dysfunctional attitude scores in the bipolar group also were significantly associated with current manic, but not depressive symptoms. This latter observation may stem from the relative absence of depressive symptoms (with little variance) among the bipolar subjects, who were chosen by virtue of manifesting pure manic (rather than mixed) features. Although prior studies have shown links between dysfunctional attitudes and depressive symptoms (e.g., Weissman and Beck, 1978), the relationship between manic symptoms and negativistic cognitive styles has not previously been demonstrated. Earlier investigators have suggested that manic patients may endorse hyperpositive statements about themselves outwardly but embrace more negativistic core beliefs on implicit measures (Lyon et al., 1999), suggestive of a so-called “manic defense” style (Neale, 1988). Although this explanation has been regarded as controversial (Scott and Pope, 2003), the current data offer the first evidence linking dysfunctional attitudes with negativistic core beliefs during pure manic phases of illness.

Differences in negatively versus positively biased thought patterns have been illustrated in unipolar versus bipolar patients with regard to decision making (Leahy, 1999, 2000). In this model, depressive thinking has been characterized by risk-aversion, while during mania, thoughts that drive decisions more often involve denying the existence of risk. In the present study, strong associations between dysfunctional attitudes were evident with CCL-M items related to decision-based features such as spending and risk-taking (excitement) only for the bipolar sample. This could suggest a distinct constellation of cognitive features among bipolar patients that bear on decision-based thought patterns.

The hierarchical differences in DAS scores seen in the unipolar depressed, bipolar manic, and normal control subjects in the present study contrast with the lack of observed

differences found by Lam et al. (2004) when comparing affectively symptomatic bipolar and unipolar patients, but evident among nonepisodic patients in their study. It is possible that additional factors may exist that could moderate the development and expression of dysfunctional attitudes, such as age at onset of illness, chronicity of depressive versus manic symptoms, depression “proneness” (Quitkin et al., 1986), or lifetime depressive episode burden. The existence of such moderating factors is suggested by associations between DAS subscores and past hospitalizations as has been reported previously (Lam et al., 2004). Future prospective studies with larger sample sizes are needed to explore such associations in multivariate fashion.

The cross-sectional design of the present study limits the degree to which generalizations can be drawn about the possible longitudinal or trait-like quality of dysfunctional attitudes and cognitive schemas. Notably, however, Wright et al. (2005) recently found significantly less change in DAS scores during a positive or negative mood challenge paradigm among remitted bipolar patients as compared with remitted unipolar patients or to nonaffectively ill controls. The current study also did not permit replication of the specific DAS subfactors discerned by Lam et al. (2004) in their principal components analysis, because of the use of the 40-item DAS in the present study group – which did not assess items drawn from the original 100-item DAS ultimately included in the 24-item DAS (Power et al., 1994) which Lam et al. (2004) found contributed to subfactors such as “Goal Attainment.”

Previous work has suggested that dysfunctional attitudes represent viable targets modifiable by cognitive psychotherapy interventions (Clark and Beck, 1999). Automatic thoughts are believed to play a mediating role between changes in underlying dysfunctional attitudes and depressive symptoms (Kwon and Oei, 2003); the present findings would suggest that they might also represent diagnostically distinct foci for cognitive therapy. Further empirical studies might fruitfully direct their efforts toward clarifying the state- versus trait-dependent nature of negative cognitive bias in bipolar patients, and the extent to which such features reflect change in randomized trials of cognitive therapy for bipolar disorder.

CONCLUSIONS

Bipolar manic patients manifest negative core beliefs at a level intermediate between those seen in unipolar depressed patients and healthy controls. The findings suggest that cognitively based psychotherapeutics for patients with bipolar disorder may more usefully focus on negativistic rather than hyperpositive core beliefs, regardless of the presence of manic features.

REFERENCES

- Alloy LB, Reilly-Harrington N, Fresco DM, Whitehouse WG, Zechmeister JS (1999) Cognitive styles and life events in subsyndromal unipolar and bipolar disorders: Stability and prospective prediction of depressive and hypomanic mood swings. *J Cogn Psychother.* 13:21–40.
- Beck AT, Brown G, Steer RA, Eidelson JI, Riskind JH (1987) Differentiating anxiety and depression: A test of the cognitive content-specificity hypothesis. *J Abnorm Psychol.* 96:179–183.
- Beck AT, Colis M, Steer RA, Madrak L, Goldberg JF (2006) Cognition checklist for mania-revised. *Psychiatry Res.* 142:333–340.
- Beck AT, Steer RA, Brown G (1993) Dysfunctional attitudes and suicidal ideation in psychiatric outpatients. *Suicide Life Threat Behav.* 23:11–20.
- Clark DA, Beck AT (1999) *Cognitive Theories and Therapy.* London: Cambridge University Press.
- First MB, Spitzer RL, Gibbons M, Williams JB (1997) *Structured Clinical Interview for DSM-IV Axis I Disorders – Clinician Version (SCID).* Washington, DC: American Psychiatric Press.
- Goldberg JF, Wenzel SJ, Singer TM, Steer RA, Beck AT (2005) Content-specificity of dysfunctional cognitions for patients with bipolar mania versus unipolar depression: A preliminary study. *Bipolar Disord.* 7:49–56.
- Hamilton M (1960) A rating scale for depression. *J Neurol Neurosurg Psychiatr.* 23:56–61.
- Hollon S, Kendall P, Lumry A (1986) Specificity of depressive cognitions in clinical depression. *J Abnorm Psychol.* 95:52–59.
- Kwon S-M, Oei TPS (2003) Cognitive change processes in a group cognitive behavior therapy of depression. *J Behav Ther Exper Psychiatr.* 34:73–85.
- Lam D, Wright K, Smith N (2004) Dysfunctional assumptions in bipolar disorder. *J Affect Disord.* 79:193–199.
- Leahy RL (1999) Decision making and mania. *J Cogn Psychother.* 13:83–105.
- Leahy RL (2000) Mood and decision-making: Implications for bipolar disorder. *Behav Ther.* 23:62–63.
- Lyon M, Startup M, Bentall R (1999) Social cognition and the manic defence. *J Abnorm Psychol.* 108:273–282.
- Neale JM (1988) Defensive function of manic episodes. In TF Oltmans, BA Maher (Eds), *Delusional Beliefs* (pp 31–47). New York: John Wiley and Sons.
- Power MJ, Katz R, McGuffin P, Duggan CF, Lam D, Beck A (1994) The Dysfunctional Attitudes Scale (DAS): A comparison of forms A and B and proposal for a new sub-scale version. *J Res Pers.* 28:263–276.
- Quitkin FM, Rabkin JG, Prien RF (1986) Bipolar disorder: Are there manic-prone and depression-prone forms? *J Clin Psychopharmacol.* 6:167–172.
- Reilly-Harrington NA, Alloy LB, Fresco DM, Whitehouse WG (1999) Cognitive styles and life events interact to predict bipolar and unipolar symptomatology. *J Abnorm Psychol.* 108:567–578.
- Scott J, Pope M (2003) Cognitive styles in individuals with bipolar disorders. *Psychol Med.* 6:1081–1088.
- Scott J, Stanton B, Garland A, Ferrier IN (2000) Cognitive vulnerability in patients with bipolar disorder. *Psychol Med.* 30:467–472.
- Sheppard LC, Teasdale JD (2000) Dysfunctional thinking in major depressive disorder: A deficit in metacognitive monitoring? *J Abnorm Psychol.* 109:768–776.
- Weissman AN, Beck AT (1978) Development and validation of the Dysfunctional Attitudes Scale: A preliminary investigation. Paper Presented at the Annual Meeting of the American Educational Research Association, Toronto, Ontario, CA.
- Wright K, Lam D, Newsom-Davis I (2005) Induced mood change and dysfunctional attitudes in remitted bipolar I affective disorder. *J Affect Disord.* 114:689–696.
- Young RC, Biggs JT, Ziegler VE, Meyer DA (1978) A rating scale for mania: Reliability, validity and sensitivity. *Br J Psychiatr.* 133:429–435.