

NIH Public Access

Author Manuscript

J Clin Psychiatry. Author manuscript; available in PMC 2013 September 01.

Published in final edited form as: *J Clin Psychiatry*. 2013 March ; 74(3): 249–255. doi:10.4088/JCP.12m08019.

Extreme Attributions Predict the Course of Bipolar Depression: Results from the STEP-BD Randomized Controlled Trial of Psychosocial Treatment

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Abstract

Objective—Little is known about predictors of recovery from bipolar depression or moderators of treatment response. In the present study we investigated attributional style (a cognitive pattern of explaining the causes of life events) as a predictor of recovery from episodes of bipolar depression and as a moderator of response to psychotherapy for bipolar depression.

Method—106 depressed outpatients with DSM-IV bipolar I or II disorder enrolled in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) were randomized to intensive psychotherapy for depression (n=62), or collaborative care (n=44), a minimal psychoeducational intervention. The primary outcome was recovery status at each study visit as measured by the Clinical Monitoring Form. Attributional style was measured at baseline using the Attributional Style Questionnaire. Data were collected between 1998 and 2005.

Results—All analyses were by intention to treat. Extreme attributions predicted a lower likelihood of recovery (p=.01, OR=0.93, 95% CI=.88-.98) and longer time until recovery (p<.01, OR=0.96, 95% CI=.93-.99), independent of the effects of initial depression severity. Among individuals with more pessimistic attributional styles, initial depression severity predicted a lower likelihood of recovery (p=.01, OR=0.64, 95% CI=.45-.91) and longer time until recovery (p<.001, OR=0.76, 95% CI=.66-.88). There was no difference in recovery rates between intensive psychotherapy and collaborative care (OR=0.90, 95% CI=0.40-2.01) in the full sample.

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Conclusions—These results suggest that extreme, rigid attributions may be associated with a more severe course of depression, and that evaluating attributional style may help clinicians to identify patients who are at risk for experiencing a more severe course of depression.

Bipolar disorder is characterized by periods of depression and/or hypomania/mania, with lengthy periods of residual symptoms prior to recovery¹. Individuals with bipolar disorder often experience a highly recurrent course of the disorder² with impairment in many areas, including cognitive impairment, poorer academic and work achievement, and high rates of suicide³⁻¹⁰. People with bipolar disorder spend substantially more time depressed than being hypomanic or manic¹¹. In particular, depressive symptoms account for much of the illness burden among individuals with bipolar disorder^{8,12,13}.

Attributional style is a cognitive characteristic that has been useful for the understanding of the course of major depression in individuals with unipolar major depressive disorder 14,15 . Originally developed to apply learned helplessness theory to humans¹⁶, pessimistic attributional style is defined as the tendency to attribute the causes of negative events to internal, stable, and global reasons (e.g., "I was fired because I am worthless"), and to attribute the causes of positive events to external, unstable, and specific reasons (e.g., "I received the promotion because I got lucky")¹⁶. Several decades of research has indicated the utility of attributional style in identifying individuals at risk for developing unipolar depression^{14,15,17,18}. In addition, several studies have found that extreme responses on measures of depressive cognition (e.g., indicating "totally agree" or "totally disagree") predict relapse in unipolar depression¹⁹⁻²¹. In bipolar disorder, pessimistic attributional style has been found to predict increases in depressive symptoms²², particularly when vulnerable individuals experience life stressors^{23,24}. However, it is unclear whether pessimistic attributional style is associated with longer depressive episodes in bipolar disorder, particularly after accounting for factors likely to be associated with recovery such as psychosocial treatment²⁵ and severity of initial depressive symptoms.

Pharmacotherapy is the first line of treatment for bipolar disorder, but pharmacological treatments often fail to bring patients with bipolar disorder to sustained remission^{26,27}. As a result, several adjunctive psychosocial interventions have been developed to treat bipolar disorder^{28,29}. This includes cognitive-behavioral therapies (CBT)³⁰⁻³⁸, family-focused treatment (FFT)^{39,40}, and interpersonal and social rhythm therapy (IPSRT)^{41,42}. One of largest randomized controlled treatment trials investigating the efficacy of psychotherapy for depression in bipolar disorder was conducted in the context of the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD)^{43,25}. This study found that FFT, IPSRT, and CBT were all equally effective in decreasing the length of time until recovery from depressive episodes and also improved functioning^{25,44}.

Despite advances in psychotherapeutic and pharmacological²⁸ treatment, many individuals with bipolar disorder recover slowly or not at all .^{9,45-47} Researchers and clinicians have called for a better understanding of predictors of outcome of bipolar depression, as well as a better understanding of which individuals are likely to benefit from psychotherapy (i.e., moderators of response to treatment)^{28,48,49}. For example, research has indicated that CBT may be more beneficial in patients with bipolar disorder with fewer mood episodes³⁸, whereas IPSRT and FFT may be superior for patients in more acutely ill states or individuals with a more severe course of the disorder²⁸. Although it has been recognized that cognitive style may help identify which individuals may benefit most from psychotherapy^{28,50,51}, to our knowledge, psychotherapy studies in bipolar disorder have neither evaluated cognitive style as a predictor for the duration of mood episodes, nor as a moderator of treatment outcome.

This study evaluated the role of attributional style in predicting recovery from bipolar depression in the context of psychosocial treatment. Specifically, we evaluated the following questions: (1) Does attributional style (including extreme attributions) impact the duration of depressive episodes in bipolar disorder? More specifically, do bipolar patients with pessimistic attributional styles or who make extreme pessimistic attributions for life events take longer to recover from depression? (2) Is there an interaction between attributional style and initial depression severity? Specifically, do patients with negative attributional style and high depression severity take longer to recover to recover from depression? (3) Does attributional style (including extreme attributions) moderate the efficacy of different types of psychotherapy for depression in bipolar disorder? To evaluate these questions we used a sample of depressed bipolar patients who were enrolled in a randomized controlled trial of adjunctive psychotherapy for bipolar depression as part of STEP-BD²⁵.

Method

Study Design and Participants

The 106 study participants (bipolar I (61%) or II (39%)) were drawn from 293 outpatients enrolled in the randomized, controlled clinical trial²⁵ comparing the efficacy of psychotherapy and collaborative care treatment as part of STEP-BD. STEP-BD is a National Institute of Mental Health-sponsored naturalistic multi-center study of the effectiveness of treatments for bipolar disorder⁴⁶ (for more details about the psychosocial treatment trial, see Miklowitz et al.²⁵). Inclusion criteria for the embedded randomized controlled psychotherapy trial included: (a) being 18 years of age or older, (b) meeting DSM-IV criteria for bipolar I or II disorder and currently (during the prior 2 weeks) meeting criteria for a major depressive episode, (c) current treatment with a mood stabilizer, (d) not currently undergoing psychotherapy or willing to taper non-study psychotherapy sessions to one or fewer per month, (e) speaks English, and (f) being willing and able to give informed consent. Exclusion criteria were requiring immediate treatment for a DSM-IV substance or alcohol use or dependence disorder (excluding nicotine), being pregnant or planning pregnancy in the next year, a history of intolerance, nonresponse, or contraindication to bupropion or paroxetine, or requiring dose changes in antipsychotic medications²⁵. The STEP-BD trial was reviewed and approved by the Human Research Institutional Review Boards of all participating universities.

The subsample of 106 patients from the larger STEP-BD trial had completed a measure of attributional style (the Attributional Style Questionnaire $[ASQ]^{52}$) prior to the first psychosocial treatment session (see Table 1). This subsample did not differ from the original sample of 293 on any patient characteristics (χ^2 s<2.15, *t*s<1.23, *p*s>.14, N's=246-293) with the exception of the severity of initial depressive symptoms, which were higher in this subsample (*t*=9.18, *p*<.001, N=288) and global assessment of functioning scores which were lower in this subsample (*t*=7.84, *p*<.001, N=292).

Procedures and Outcomes

In STEP-BD patients were diagnosed with bipolar disorder by study psychiatrists using the Affective Disorders Evaluation^{53,54}. A second clinical interviewer verified the results using the Mini-International Neuropsychiatric Interview (version 5.0)^{55,46}. The 106 participants included in the present study were randomly assigned to an intensive psychotherapy (n=62; CBT [n=31], IP SRT [n=20], or FFT [n=11]) or to a Collaborative Care (CC [n=44]) control condition (for more detailed information of these treatments, see Miklowitz et al.²⁵; Otto et al.⁵⁶; Miklowitz⁵⁷; Frank⁵⁸). CC was a minimal psychosocial intervention that consisted of three 50-minute individual sessions conducted within 6 weeks after randomization and included psychoeducation about bipolar disorder and development of a relapse prevention

contract. CC was intended to provide a brief version of the most common strategies shown to benefit patients with bipolar disorder⁵⁷. All intensive psychosocial treatments consisted of up to thirty 50-minute sessions conducted by therapists who received training and supervision from nationally-recognized experts in the specific intensive treatments²⁵.

Measures

Clinical Monitoring Form (CMF)⁵⁹—As in Miklowitz et al.²⁵, the primary outcome measure in the present study was patients' clinical recovery status, which was assessed at each visit via the CMF⁵⁹. The CMF is a well-validated measure of the severity of DSM-IV mood symptoms and clinical status^{1,25,43,59,60}. Clinical status (e.g. recovered) is based on the presence or absence of DSM-IV criteria for episodes of depression or mania/hypomania, with recovered status defined as 2 moderate symptoms of depression for 8 of the previous weeks. Initial depression severity was defined as the CMF depressive symptom severity score (sum of the severity of all depression symptoms) at study entry, and could range from 0 to 12. Initial medication types and dosages were also evaluated with the CMF. We also computed a variable representing psychiatric medication load, following the coding system delineated by Phillips et al.⁶¹, such that higher values represent greater medication load (Table 1). Each psychiatric medication load scores ranged from 0 to 8 (Mean=3.64, SD=1.94).

Attributional Style Questionnaire (ASQ)⁵²—Participants rated the perceived cause of six hypothetical negative events and six hypothetical positive events using 7-point Likert scales in terms of internality (*due to me* vs. *due to other people or circumstances*), stability (*will always be present* vs. *will never be present*), and globality (*influences all situations in my life* vs. *influences only this particular situation*). Scores were computed representing attributional style for negative events (Mean=86.39, Median=87, SD=14.49; higher scores indicate more pessimistic attributional style), positive events (Mean=84.85, Median=86, SD=13.20; higher scores indicate more optimistic versus pessimistic attributional styles, computed by subtracting the degree of optimistic versus pessimistic attributional styles, computed by subtracting the positive event score from the negative event score (Mean=1.54, Median=2, SD=19.44; higher scores indicate more pessimistic attributional style). Scores on these subscales were comparable with previously-published scores in healthy and depressed samples^{52, 62}.

Because of its utility in predicting recurrence of unipolar depression in previous research¹⁹⁻²¹, we also computed the number of "extreme" responses (rating of a "1" or "7" on each item), resulting in variables for extreme pessimistic (Mean=5.84, Median=5, SD=4.79), extreme optimistic (Mean=4.64, Median=3, SD=4.80), and total extreme responses (Mean=10.48, Median=9, SD=8.00), with higher scores indicating a greater frequency of extreme responses of each type. Internal consistency for the ASQ was high (α =.76).

Statistical Analysis

To evaluate the effects of attributional style and extreme responses on likelihood of recovery and time until recovery, we conducted logistic regressions and Cox proportional hazards models, respectively. All analyses were by intention to treat. Patients were included until their final assessment point with a maximum of 365 days in the study²⁵ (M=291.78 days, SD=96.51). The proportionality of risk assumption was upheld for all survival analyses. Odds ratios less than one indicate lower likelihood of recovery and greater time until recovery.

To evaluate the incremental ability of attributional style and extreme responses to predict recovery status beyond the effects of treatment or initial depressive symptoms, treatment condition (CC or intensive psychotherapy) and initial depressive symptoms were included in step 1 of the regression models, and ASQ variables in step 2. Prior to evaluating ASQ variables as moderators of treatment effects, we determined whether there were significant effects of treatment condition on likelihood of recovery and time until recovery⁶³.

Results

Incremental Effects of Attributional Style on Recovery from Depression

Demographic and clinical characteristics including psychopharmacological medications, attrition, and treatment completion are shown in Table 1 (for the characteristics of the full sample see Miklowitz et al²⁵). The results of the primary analyses (logistic regression models using attribution scores, psychosocial treatment condition, and initial depression severity to predict recovery, and Cox regression analyses to predict time to recovery) are in Table 2. All analyses had a total sample of N=106 participants. The severity of initial depressive symptoms was not associated with likelihood of recovery (Wald=2.64, OR=0.87, 95% CI=.73-1.03, p=.10, R^2 =.04), but it was associated with longer time to recovery (Wald=6.57, OR=0.89, 95% CI=.81-.97, p=.01). Higher medication load predicted a lower likelihood of recovery (Wald=4.38, OR=0.80, 95% CI=.64-.99, p=.04, R^2 =.06), and a greater time to recovery (Wald=11.37, OR=0.80, 95% CI=.70-.91, p<.001). ASQ variables were not significantly associated with initial depressive symptoms (rs<.13, ps>.19) or with medication load (rs<.16, ps .10).

Controlling for treatment group (intensive psychotherapy and collaborative care) and initial depressive symptoms, there was no significant effect of ASQ total score on likelihood of recovery or time until recovery (Table 2). However, consistent with our hypotheses, more ASQ total extreme responses were associated with a significantly lower likelihood of recovery and a longer time until recovery (Table 2). This effect was significant for extreme pessimistic responses (Logistic p=.02 and Cox p=.04) as well as for extreme optimistic responses (Logistic p=.04 and Cox p=.03).

Patients' ASQ total scores interacted with initial depressive symptoms in predicting likelihood of recovery and time until recovery (Table 2). To probe the nature of these interactions, we centered the ASQ variables and tested the effects of depressive symptoms on recovery at one standard deviation above or below the ASQ means⁶⁴. Consistent with the hypothesis that initial depressive symptoms had a more severe impact on course of depression among individuals with a negative attributional style, higher initial depressive symptoms were associated with lower likelihood of recovery (Wald=6.25, OR=0.64, 95% CI=.45-.91, p=.01) and greater time until recovery (Wald=14.56, OR=0.76, 95% CI=.66-.88, p<.001) among individuals with more pessimistic attributional styles, but did not predict likelihood of recovery (Wald=0.38, OR=1.09, 95% CI=.83-1.42, p=.54) or time until recovery (Wald=0.04, OR=0.99, 95% CI=.87-1.13, p=.85) among individuals with more optimistic attributional styles.

Effects of Treatment on Recovery from Depression

In contrast with the full sample of 293 patients (see Miklowitz et al.²⁵), there was no significant effect of treatment group in this study's subsample (N = 106) on likelihood of recovery from depression (*B*=-0.11, Wald=0.07, OR=0.90, *p*=.79, 95% CI=.40-2.01, R^2 <. 01), or time to recovery (*B*=-0.10, Wald=0.16, OR=0.91, *p*=.69, 95% CI=.56-1.47). Per Kraemer et al.⁶³, this precluded the investigation of whether attributional style moderated the effect of psychotherapy compared to collaborative care on recovery. All results remained

consistent after controlling for study site, number of psychosocial treatment sessions, bipolar I or II status, age, gender, education, number of lifetime episodes of depression and mania/ hypomania, baseline manic symptoms, psychiatric medication load, and age at onset of bipolar disorder.

Discussion

Our results indicated that, among depressed patients with bipolar I or II disorder, extreme pessimistic and extreme optimistic responses predicted a lower likelihood of recovery and a greater time until recovery from depression. These results remained significant when initial depression severity, psychosocial treatment type, and symptoms of mania were included in regression models. We had hypothesized this effect for pessimistic responses; yet the emergence of significant prediction for extreme optimistic responses suggests that it is not simply the negative nature of extreme thoughts that may be important for prediction of recovery in bipolar depression, but the fixity or rigidity of thought, as reflected by greater belief in both positive and negative extreme thoughts.

Cognitive rigidity, typically assessed with neuropsychological tasks, has itself been linked to both disorder onset and a more chronic course of depression⁶⁵⁻⁶⁷. In contrast, being more fluidly aware of the possible inaccuracies of thoughts (metacognitive awareness) is associated with lower relapse into depression⁶⁸. Our results are in accord with both of these findings and suggest that the presence of extreme cognitions (regardless of valence) may indicate a lower likelihood of recovery from depression in bipolar disorder.

The tendency to make extreme attributions about the causes of life events appears to be associated with a more severe course of bipolar depression. To recover, these individuals may need to overcome not only their depressed mood but also the extreme rigid thought style through which they interpret negative events in their lives, which may serve to maintain depressed mood. Indeed, individuals with a pessimistic attributional style and more severe initial depressive symptoms experienced the worst course of depression, suggesting that the combination of these factors may be associated with a poorer prognosis. These results are consistent with studies that report that a pessimistic attributional style is a risk factors for depressed mood among individuals with bipolar disorder^{23,24}. The present study indicates that pessimistic attributional style, and particularly extreme attributions, may also predict the course of bipolar depression by means of maintaining depressed mood. Thus, evaluating attributional style among patients presenting for treatment for bipolar depression may allow for adapting treatments in order to address these issues. For example, it is possible that bipolar individuals who make extreme attributions would benefit from cognitive restructuring using hypothetical scenarios to help them make more balanced attributions, or from observing their attributions using a mindful, nonjudgmental, decentered approach to their thoughts, as suggested by mindfulness-based treatments for bipolar disorder⁶⁹⁻⁷¹

To our knowledge, this study is the first to evaluate cognitive style as a predictor of the course of bipolar depression. We utilized a sample early in the development of a major depressive episode which may be representative of patients with bipolar disorder who are seen for acute care in clinical practice²⁵. Nevertheless, several limitations of the study should be noted. First, only a subsample of participants from the full trial of psychosocial treatments for bipolar depression completed the ASQ, so it is unclear whether these results would extend to the full sample in STEP-BD. In this subsample, intensive psychotherapy was not associated with a more rapid time to recovery from depression, possible because patients in the subsample had more severe initial depressive symptoms and poorer functioning than those in the full sample.²⁵ Second, attributional style was only evaluated at

time of randomization, so it was not possible to evaluate whether attributional style changed as a result of treatments condition or in concert with recovery from depression. Third, although our primary outcome measure of recovery from the depressive episode is clinically relevant, other ways of evaluating course of illness (e.g., continued residual mood symptoms, switch to mania, or symptom worsening⁴⁹) should be evaluated in greater detail in the future.

Fourth, we did not evaluate intervening life events as suggested by vulnerability-stress models of bipolar disorder^{23,24,72}. Evaluating life stress in combination with cognitive vulnerabilities such as attributional style might allow clinicians to predict more precisely which patients are likely to have more severe courses of illness⁵¹. In addition, our sample was relatively homogenous in terms of race and socioeconomic status. Finally, the primary findings were characterized by small to medium effect sizes. Nonetheless, even small effects may be clinically relevant when evaluating predictors of recovery from bipolar depression⁷³.

In conclusion, attributional style and extreme attributions for life events may be important predictors of the course of bipolar depression. Future research should examine whether evaluating attributions in the context of life stress^{23,24,72}, as well as attributions for actual (as opposed to hypothetical) negative life events⁷⁴, allows for better prediction of which individuals take longer to recover from bipolar depression. Finally, more work is needed to determine whether enhancing psychotherapies such as CBT by more deliberately targeting negative or rigid cognitions, or by using cognitive remediation strategies for treating cognitive rigidity⁷⁵, would improve the course of depression among bipolar individuals undergoing pharmacological treatment.

Acknowledgments

Funding/Support: STEP-BD was funded in part by contract N01MH80001 from the National Institute of Mental Health (Gary Sachs). Support for the development of the psychosocial treatments was provided by grants MH29618 (Ellen Frank), MH43931 (David Miklowitz), and MH55101 (David Miklowitz) from the National Institute of Mental Health and by the National Alliance for Research on Schizophrenia and Depression (David Miklowitz). Jonathan Stange was supported by National Research Service Award F31MH099761 from NIMH. Louisa Sylvia was employed by Massachusetts General Hospital, served as a Consultant for Bracket Global and Clintara, received research support from NIMH, is a former stockholder in Concordant Rater Systems, and has received support from New Harbinger Publishers. Pedro Vieira da Silva Magalhães reports no relevant financial interests. David Miklowitz has received research support or honoraria from NIMH, Brain and Behavior Research Foundation, Danny Alberts Foundation, and Attias Family Foundation; He has received other financial or material support from Guilford Press, and John Wiley and Sons. Michael Otto has served as a consultant for MicroTransponder, Inc. Ellen Frank has served as a consultant for Servier International, and has received other financial or material support from Guilford Press and the American Psychological Association Press. Michael Berk is an employee of Barwon Health, Deakin University; he has received research support from NIH, NHMRC, and CRC Simons; he has received honoraria from Lundbeck, Astrazeneca, Servier, Lilly, and ISBD Korea; he has served as a speaker or on the advisory board for Astrazeneca, Lundbeck, Lilly, and Janssen; and he has received financial or material support from Allen & Unwin and Cambridge University Press. Andrew Nierenberg has received honoraria or travel expenses from: American Society of Clinical Psychopharmacology, Australasian Society for Bipolar Disorder, Bayamon Region Psychiatric Society, San Juan, Puerto Rico, Belvoir Publishing, Boston Center for the Arts, Corcept, CRICO, Dartmouth, Dey Pharma, L.P./Mylan Inc., Israel Society for Biological Psychiatry, John Hopkins University, National Association of Continuing Education, PAI, Pamlabs, Physicians Postgraduate Press, Ridge Diagnostics, Slack Publishing, Sunovion, Teva Pharmaceuticals, University of Florida, University of Michigan, University of New Mexico, University of Miami, University of Wisconsin, Wolters Klower Publishing, Potential consulting honoraria from Astra Zeneca, Bristol Myers Squibb, Forest, Pfizer, Ridge Diagnostics. Potential support of research at MGH through Biogen Idec, Dey Pharmaceuticals, Pamlabs, Shire, and Sunovian. He owns stock options in Appliance Computing, Inc.(MindSite.com) and Brain Cells, Inc. Additional income is possible from Infomedic.com depending on overall revenues of the company but no revenue has been received to date. Through MGH, Dr. Nierenberg is named for copyrights to: the Clinical Positive Affect Scale and the MGH Structured Clinical Interview for the Montgomery Asberg Depression Scale exclusively licensed to the MGH Clinical Trials Network and Institute (CTNI). Thilo Deckersbach was supported in part by a K-23 NIMH Career Award 1K23MH074895-01A2. His research has also been funded by NARSAD, TSA, OCF and Tufts University. He has received honoraria, consultation fees and/or royalties from the MGH Psychiatry Academy, BrainCells Inc., Systems Research and Applications Corporation, Boston University, the Catalan Agency for Health Technology Assessment

and Research, the National Association of Social Workers Massachusetts, the Massachusetts Medical Society, Tufts University, NIDA and Oxford University Press. He has also participated in research funded by NIH, NIA, AHRQ, Janssen Pharmaceuticals, The Forest Research Institute, Shire Development Inc., Medtronic, Cyberonics, and Northstar.

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 $^{\rm a}$ 0 = 0%, 1 = 100% predicted likelihood of recovery. * p < .05.

Figure 1.

Interaction between Attributional Style and Initial Depressive Symptoms Predicting Likelihood of Recovery from Depression.

Table 1

Demographic and Illness Characteristics of 106 Bipolar Depressed Patients.

Variable	Value
Age, mean ± SD	39.68 ± 11.84
Female sex	62%
Race	
Caucasian/White	94%
African American/Black	5%
Asian/Pacific Islander	0%
Other	1%
Hispanic ethnicity	1%
Education >1 year of college	85%
Income < \$29,999	39%
Marital status	
Married	34%
Never married	37%
Separated/Divorced	28%
Widowed	2%
Diagnosis	
Bipolar I	61%
Bipolar II	39%
>10 Previous depressive episodes	65%
>10 Previous manic episodes	67%
Age at illness onset, mean \pm SD	21.89 ± 10.09
Baseline depression symptoms, mean \pm SD	6.23 ± 2.43
Baseline mania symptoms, mean \pm SD	1.16 ± 1.17
Baseline GAF score, mean \pm SD	55.91 ± 8.59
Medications	
Lithium	34%
Atypical antipsychotic	26%
Anticonvulsant	56%
Benzodiazepine	25%
Antidepressants	46%
Stimulants	1%
Valproate	36%
Other mood stabilizers	28%
Medication Load Index ⁷⁴	3.64 (1.94)
Comorbid diagnoses	
Anxiety disorder (current)	49%
Substance abuse/dependence (current)	13%
ADHD (current)	14%
Any lifetime comorbid disorder	83%

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Note. Data are presented as number (percentage) unless otherwise indicated. Percentages are not always based on 106 patients owing to missing data (see Miklowitz et al., 2007²⁵).

Table 2

Logistic Regression and Cox Regression Analyses Evaluating Attributional Style and Extreme Responses as Predictors of Likelihood of Recovery and Time until Recovery from Depression^a

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Step	Predictor	В	Wald	OR	d	95% CI	$\Delta R^{2} b, c$
ASO 7	Total Score Model <u>s</u>						
	Logistic Regression: Predicting Recovery						
-	CMF Depressive Sx	-0.14	2.47	0.87	.12	.730-1.035	.04
	Treatment Group ^d	0.02	<0.01	1.02	96.	.447-2.332	
5	ASQ Total	>-0.01	0.09	<1.00	.76	.976-1.018	<.01
	Cox Regression: Predicting Time Until Recovery						
1	CMF Depressive Sx	-0.12	5.92	0.89	.02	.812978	
	Treatment Group ^d	0.05	0.04	1.05	.84	.647-1.714	
5	ASQ Total	<0.01	0.01	1.00	.94	.988-1.011	<.01
ASQ]	<u>Extreme Total Models</u>						
	Logistic Regression: Predicting Recovery						
1	CMF Depressive Sx	-0.16	3.16	0.85	.08	.715-1.017	.04
	Treatment Group ^d	0.10	0.05	1.10	.82	.470-2.597	
5	ASQ Extreme Total	-0.07	6.70	0.93	.01	.883983	60.
	Cox Regression: Predicting Time Until Recovery						
	CMF Depressive Sx	-0.13	6.87	0.88	.01	.794967	
	Treatment Group ^d	-0.02	0.01	0.98	.92	.596-1.599	
2	ASQ Extreme Total	-0.05	6.86	0.96	.01	.925989	.07
Mode	is for Interaction between ASQ Total Score and In	nitial Dep	ressive S	ymptom	S		
	Logistic Regression: Predicting Recovery						
1	Treatment Group ^d	-0.07	0.02	0.94	88.	.401-2.187	<.01
5	CMF Depressive Sx	-0.19	3.59	0.83	.06	.679-1.007	.04
	ASQ Total	>01	0.04	1.00	.84	.975-1.020	
3	CMF Depressive Sx X ASO Total	01	3.81	0.99	.05	.981999	.06

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Cox Regression: Predicting Time Until Recovery

Step	Predictor	В	Wald	OR	d	95% CI	$\Delta R^{2}^{b,c}$	
-	Treatment Group ^d	0.02	<0.01	1.02	.95	.6211659		
2	CMF Depressive Sx	-0.14	8.40	0.87	<.01	.794956	.03	
	ASQ Total	0.02	2.99	1.02	.84	.997-1.045		
3	CMF Depressive Sx X ASQ Total	>-0.01	4.06	0.99	.04	.993999	.04	
Model	s for Interaction between ASQ Extreme Total and	Initial D	epressiv	e Sympt	oms			
	Logistic Regression: Predicting Recovery							
-	Treatment Group ^d	0.08	0.03	1.08	.86	.456-2.549	<.01	
2	CMF Depressive Sx	-0.13	1.91	0.88	.17	.725-1.057	.12	
	ASQ Extreme Total	-0.08	6.83	0.93	.01	.876981		
3	CMF Depressive Sx X ASQ Extreme Total	-0.01	0.60	0.99	4.	.972-1.012	.01	
	Cox Regression: Predicting Time Until Recovery							
Ц	Treatment Group ^d	-0.03	0.01	0.97	.92	.595-1.594		
5	CMF Depressive Sx	-0.13	6.14	0.88	.01	.799974	60.	
	ASQ Extreme Total	-0.05	7.16	0.95	.01	.919987		
ŝ	CMF Depressive Sx X ASQ Extreme Total	>-0.01	0.56	1.00	.46	.986-1.006	.01	

 $^{a}N = 106.$

 b Change in R^{2} for logistic regressions represents Nagelkerke R^{2} change since previous step, an estimate of the increment in variance in the probability of recovery accounted for by the predictors tested since the previous step⁷³.

^CChange in R^2 for Cox regressions represents Cox-Snell R^2 change since previous step, an estimate of the relative association between survival and the predictors tested since the previous step 76.

 $d_{\rm T}$ reatment Group = Intensive psychosocial treatment (1) vs. Collaborative Care (0).