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Coping strategies and real-world functioning in bipolar disorder

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Abstract

Background—Bipolar disorder (BD) patients encounter significant life adversity, which has contributed to bipolar disorder being a leading cause of disability worldwide. Studies suggest BD patients have more maladaptive coping strategies, some of which can impact their illness course. Yet research on which coping strategies most influence disability is lacking. Such research could inform cognitive-behavioral targets to improve functional outcomes. Thus, we sought to identify relations between coping strategies and real-world function in BD.

Methods—In 92 affectively-stable BD outpatients, we measured coping strategies via the Brief COPE, real-world disability via the World Health Organization Disability Assessment Schedule, current symptoms, illness chronicity, and neurocognitive functioning via the MATRICS. Multiple regression analysis served to identify the neurocognitive domains predictive of disability for entry into subsequent analyses. Multiple regressions assessed how adaptive and maladaptive coping strategies influenced disability.

Results—Only one neurocognitive domain, verbal learning, significantly predicted disability and was included in subsequent analyses. Maladaptive coping significantly predicted disability while adaptive coping did not. Behavioral disengagement (giving up) and self-blame were the only remaining predictors of disability, after controlling for age, sex, illness chronicity, current symptoms, and neurocognitive functioning.

Limitations—The study was limited by the use of a self-report disability measure and a brief-form coping scale.

Conclusions—Results suggest that giving up and self-blame are significant predictors of real-world functioning beyond sub-threshold depressive symptoms. Our results in BD expand upon recent schizophrenia studies suggesting that defeatist beliefs negatively influence functional outcomes across the range of major psychiatric disorders.

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Keywords

bipolar disorder; coping; resilience; real-world functioning; disability; defeatist beliefs

Bipolar disorder (BD) is a leading cause of disability (World Health Organization, 2001), often exacerbated by the numerous adversities BD patients face. Even after achieving affective stability, many BD patients continue experiencing chronic subsyndromal symptoms (Judd et al., 2002) and neurocognitive deterioration (Robinson and Nicol Ferrier, 2006) that contributes to functional impairment (Wingo et al., 2009; Bowie et al., 2010; Burdick et al., 2014). For patients able to recognize mania prodromes, certain coping responses have reduced relapse frequency and severity (Lam, Wong, & Sham, 2001). This has spurred research lines into how coping may impact bipolar illness.

Bipolar patients have been shown to engage in more maladaptive coping than controls. Specifically, bipolar patients respond to adversities with more rumination, catastrophizing, self-blame, substance use, risk-taking, and behavioral disengagement (i.e. giving up) while using significantly less positive reframing, positive refocusing, and ‘putting into perspective’ as well as less active coping (i.e. positive behavior change), less planning, and less emotional or instrumental support-seeking. In contrast, healthy controls in these studies show a consistently adaptive pattern of responses, with little variability across studies. Specifically, healthy controls most highly endorse active coping, planning, acceptance, positive reframing, and putting into perspective, as well as seeking emotional and instrumental support (Green et al., 2011; Rowland et al., 2013; Wolkenstein et al., 2014; Fletcher et al., 2013, 2014). Bipolar patients’ maladaptive coping has also been linked to their bipolar illness severity, including increased hypomania, depression, anxiety, and stress levels (Green et al., 2011; Fletcher et al., 2013, 2014). Poor coping also impacts BD treatment, with denial and non-acceptance being linked to poorer medication adherence (Greenhouse et al., 2000).

Despite evidence of poorer coping exacerbating bipolar illness, no studies have yet evaluated how coping behaviors impact the wide array of real-world functioning domains. Such research could inform adjunctive cognitive-behavioral treatments targeting the coping strategies implicated in real-world outcomes. Further, narrowing down to the coping strategies most central to disability could help highlight the most relevant cognitive-behavioral targets for BD. To this end, we examined relations between coping strategies and disability in bipolar outpatients.

Method

Participants

Our sample was 92 bipolar outpatients aged 18 to 65 (mean = 45.88 ± 9.98); 42.4% were female (n = 39); 59.8% were African-American (n=55); 29.3% were Caucasian (n = 27); 8.7% were Hispanic (n=8); and 2.2% were “Other” (n = 2). All participants provided informed consent, had BD-I, BD-II, or BD-NOS diagnoses, and were affectively-stable as measured by 3 on the Clinical Global Impression for Bipolar Disorder scale (CGI-BP).

Specifically, 78.3% of the sample was diagnosed with BD-I ($n = 72$); 19.6% with BD-II ($n = 18$); and 2.2% with BD-NOS ($n = 2$). Participants were excluded if they had any neurological disorder or CNS trauma, any childhood attention-deficit or learning disability, any recent substance abuse/dependence, or any electroconvulsive therapy within the past year.

Clinical assessments

All participants were administered the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders (SCID-I/P). Bipolar illness chronicity, measured as total mood episodes, was also collected. Current bipolar symptoms were assessed using the 24-item Hamilton Rating Scale for Depression (HRSD; mean = 3.42 ± 3.94) and the Clinician-Administered Rating Scale for Mania (CARS-M; mean = 8.14 ± 6.23).

Disability

Disability was measured using the World Health Organization Disability Assessment Schedule, 2nd Edition (WHODAS-II; Üstün, 2010). The WHODAS-II is a 36-item self-report form assessing functioning over the past month across 6 domains, including cognition, mobility, self-care, getting along, life activities, and participation. We opted for the WHODAS-II's alternate 32-item scoring rubric omitting employment, given the frequent difficulty for bipolar patients to maintain employment. The WHODAS-II has been successfully utilized in BD with excellent reliability and convergent validity (Guilera et al., 2015). In our sample, the 32-item WHODAS-II showed excellent reliability ($\alpha = 0.93$).

Coping strategies

Coping was measured with The Brief COPE (B-COPE; Carver, 1997), a 28-item self-report scale (shortened from the 60-item COPE inventory) measuring 14 strategies using two items each, split into overarching domains of adaptive and maladaptive strategies. The *adaptive* domain averages the subscales: 1) active coping, 2) planning, 3) positive reframing, 4) acceptance, 5) humor, 6) religion, 7) emotional support-seeking, and 8) instrumental support-seeking. The *maladaptive* domain averages the subscales: 9) self-distraction, 10) denial, 11) venting, 12) substance use, 13) behavioral disengagement and 14) self-blame. The B-COPE has been successfully utilized in BD with good psychometric properties (Greenhouse et al., 2000; Fletcher et al., 2013; 2014). In our sample, all subscales demonstrated good internal consistency ($\alpha = 0.60$) except positive reframing, acceptance, self-distraction, and venting ($\alpha = 0.53, 0.58, 0.17$, and 0.51 respectively), which were excluded. All other internal consistencies were good (α ranging from 0.68 to 0.91). The adaptive and maladaptive domains were recalculated accordingly and demonstrated good reliability in our sample ($\alpha = 0.82$ and 0.79 , respectively).

Neurocognitive performance

Neurocognitive performance was evaluated using The MATRICS Battery (MCCB) (Nuechterlein et al., 2008), which assesses seven domains: processing speed, attention/vigilance, working memory, verbal learning, visual learning, reasoning and problem solving, and social cognition. The MCCB has been successfully validated in BD (Burdick et al.,

2014). Based upon prior work (Burdick et al., 2014), the MCCB's verbal learning task was replaced with the more complex California Verbal Learning Test, 2nd Edition (CVLT-II) to better capture the subtle verbal learning deficits in BD. We also estimated premorbid IQ using the Wide Range Achievement Test, 3rd Edition - Reading Subtest (WRAT-3).

Results

First, to address effects of neurocognitive performance on functional outcome, we ran a multiple regression to assess the impact of MCCB domains on WHODAS-II disability, controlling for age, sex, race, illness chronicity, and current bipolar symptom levels. The model was significant and accounted for 25.9% of the variance in WHODAS-II disability levels ($F(14,89) = 1.88, p < .05$); however, current depression (HRSD) and CVLT-II performance were the only significant predictors of WHODAS-II disability (HRSD: $\beta = .83, p < .001$; CVLT-II: $\beta = -.34, p < .05$). No other variables were significant (see Table 1). Thus, the CVLT-II was the only neurocognitive domain included in subsequent analyses.

Next, we evaluated the impact of adaptive and maladaptive coping domains on WHODAS-II disability, again controlling for age, sex, race, illness chronicity, current bipolar symptom levels, and now including CVLT-II performance as the sole neurocognitive variable. The model was significant and accounted for 39.3% of the variance in WHODAS-II disability ($F(9, 91) = 5.90, p < .001$). Specifically, current HRSD depression level, CVLT-II performance, and B-COPE maladaptive coping strategies were significantly associated with WHODAS-II disability (HRSD: $\beta = .63, p = .001$; CVLT-II: $\beta = -.23, p < .05$; B-COPE Maladaptive: $\beta = 3.89, p < .001$). No other variables were significant (see Table 2).

Last, we ran a stepwise regression model to see which maladaptive coping strategies were significantly associated with WHODAS-II disability. This follow-up model was also significant, accounting for 44.1% of the variance in WHODAS-II disability ($F(9, 91) = 7.19, p < .001$). Only the maladaptive coping strategies of behavioral disengagement ($\beta = 2.97, p < .001$) and self-blame ($\beta = 1.37, p < .05$) were significantly associated with WHODAS-II disability. Current depression symptoms ($\beta = 0.50, p < .01$) and CVLT-II performance remained significant predictors of disability ($\beta = -0.25, p < .05$). No other variables were significant (see Table 2).

Discussion

This study investigated relations between coping strategies, neurocognitive performance, and disability in BD. We found that a more maladaptive coping style and, specifically, greater use of the maladaptive strategies of behavioral disengagement (i.e. giving up) and self-blame (i.e. criticizing oneself), were significantly associated with more disability, even after controlling for age, sex, illness chronicity, current symptom levels and neurocognitive performance. These findings are consistent with recent work showing higher levels of behavioral disengagement and self-blame in bipolar patients versus controls (Fletcher et al., 2013, 2014). Notably, behavioral disengagement and self-blame remained significant in the presence of HRSD scores, distinguishing these cognitive structures from the anhedonia, low energy, and excessive guilt characteristic in bipolar depression. A possible explanation for

these findings may relate to defeatist beliefs as a contributor to functional deterioration in severe mental illness. Specifically, it is possible these bipolar patients' self-blame and behavioral disengagement may reflect defeatist beliefs that contribute to their functional disability similar to recent schizophrenia studies that identified defeatist beliefs as an important contributor to negative symptom severity and functional outcome (Grant and Beck, 2009; Horan et al., 2010). Such studies have raised questions about a possible downward spiral where schizophrenia patients' initial deficits (cognitive, social and otherwise) can result in negative experiences that lead to defeatist beliefs about their capacity to productively engage in activities, which in turn may contribute to a worsening of psychotic illness and further strengthening of defeatist beliefs (Horan et al., 2010). It is possible a similar process may contribute to disability in BD, where bipolar patients' initial deficits result in negative experiences that may lead them to become discouraged and criticize themselves, which in turn may contribute to worsening bipolar illness, more pronounced deficits, and a further strengthening of self-criticism and giving up. Future studies are needed to more fully investigate defeatist beliefs in BD.

A secondary finding concerned the neurocognitive domains that contribute to disability. Specifically, our results found only verbal memory was significantly associated with disability while all other MCCB domains were non-significant. Findings are consistent with meta-analytic data showing verbal memory as substantially impaired and critical to functional outcomes in BD (Torres et al., 2007). Our findings provide further evidence of the CVLT-II's utility in BD.

The present study has a number of limitations. Our disability measure, the WHODAS-II, relied on self-report, which is inherently more subject to error than clinician-rated measures. Unfortunately, clinician-administered measures of functioning were unavailable. However, participants were affectively-stable at the time of study and thus were believed to be largely capable of accurately answering our self-report disability measure. In addition, we used the 28-item B-COPE rather than the larger 60-item COPE Inventory, limiting our ability to comprehensively assess coping. Specifically, B-COPE subscales used 2 rather than 4 items each, resulting in four subscales being excluded due to low reliability. Thus, it is possible that, with higher reliability, some of these excluded subscales might have been retained. Although the inclusion of these other coping subscales might have expanded our findings, it is unlikely their inclusion would have undermined our current results, as the behavioral disengagement and self-blame subscales demonstrated very good reliability in our sample ($\alpha = 0.75$ and 0.78 , respectively). Our study also lacked a healthy control comparison group, which limited our ability to observe how healthy controls' coping profiles might differentially influence their real-world functioning compared to our bipolar patients. Specifically, healthy controls could have shown great variability on our coping measures, which might have impacted results. However, in past work, healthy controls have consistently demonstrated adaptive responses to stress and thus it is likely that their coping responses would be similarly adaptive rather than maladaptive, which in turn would predict high levels of real-world functioning. Nevertheless, future studies are needed to directly compare healthy controls to bipolar patients regarding how coping strategies impact real-world disability.

In conclusion, we aimed to assess the associations between coping strategies, neurocognitive functioning, and functional disability in BD. We found that greater use of two maladaptive coping strategies, behavioral disengagement and self-blame, was significantly associated with more disability in BD. Verbal learning was the sole cognitive predictor of disability. These results suggest preliminary evidence consistent with past work on defeatist beliefs in schizophrenia, where bipolar patients' initial deficits result in negative experiences that lead to discouragement, self-criticism, and otherwise giving up, which in turn may exacerbate bipolar illness and further strengthen defeatist beliefs. Such results suggest that in addition to mood-stabilizers, cognitive-behavioral interventions targeting defeatist and self-critical beliefs may serve as critical early interventions that can help prevent such downward spirals into disability. Future studies are needed to follow up and expand upon the present results to elucidate the impact of defeatist beliefs on functional outcomes in BD.

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Highlights

- We studied how coping strategies impact disability in 91 stable bipolar outpatients
- Maladaptive coping and not adaptive coping was linked to disability
- Specifically giving up and self-criticism significantly predicted disability levels
- Results suggest defeatist beliefs may impact bipolar patients' functional outcomes

Table 1

Regression analysis of neurocognitive domains predicting WHODAS-II functional disability level

Standard regression model for adaptive and maladaptive coping strategies		
	β	p
Age	0.04	<i>ns</i>
Sex	−2.52	<i>ns</i>
Race	−1.55	<i>ns</i>
Illness Chronicity	−0.02	<i>ns</i>
CARS-M	0.05	<i>ns</i>
HRSD	0.83	< 0.001
WRAT-3 Reading (Premorbid IQ)	−0.01	<i>ns</i>
MATRICS Cognitive Consensus Battery:		
Speed of Processing	−0.14	<i>ns</i>
Attention/Vigilance	0.07	<i>ns</i>
Working Memory	0.06	<i>ns</i>
Verbal Learning (CVLT-II)	−0.34	< 0.05
Visual Learning	0.17	<i>ns</i>
Reasoning and Problem Solving	0.01	<i>ns</i>
Social Cognition	0.14	<i>ns</i>

Note: WHODAS-II: World Health Organization Disability Assessment Schedule, 2nd Edition; HRSD: The Hamilton Rating Scale for Depression; CARS-M: The Clinician-Administered Rating Scale for Mania; CVLT-II: California Verbal Learning Test, 2nd Edition. WRAT-3 Reading: The Wide Range Achievement Test – Reading Subtest; Illness chronicity assessed via the total number of lifetime mood episodes.

Table 2

Regression analyses of coping strategies predicting WHODAS-II functional disability level

Standard regression model for adaptive and maladaptive coping strategies		
	β	p
Age	0.03	<i>ns</i>
Sex	−0.68	<i>ns</i>
Race	−3.73	<i>ns</i>
Illness Chronicity	−0.01	<i>ns</i>
CARS-M	−0.05	<i>ns</i>
HRSD	0.63	= 0.001
CVLT-II T-Score	−0.23	< 0.05
Brief COPE:		
Adaptive Coping Strategies	0.80	<i>ns</i>
Maladaptive Coping Strategies	3.89	< 0.001
Stepwise regression model for specific maladaptive coping strategies		
	β	p
Age	0.07	<i>ns</i>
Sex	−0.98	<i>ns</i>
Race	−4.01	<i>ns</i>
Illness Chronicity	−0.25	<i>ns</i>
CARS-M	−0.27	<i>ns</i>
HRSD	0.50	< 0.01
CVLT-II T-Score	−0.25	< 0.05
Brief COPE Maladaptive Strategies:		
Behavioral Disengagement	2.97	< 0.001
Self-Blame	1.37	< 0.05

Note: WHODAS-II: World Health Organization Disability Assessment Schedule, 2nd Edition; HRSD: The Hamilton Rating Scale for Depression; CARS-M: The Clinician-Administered Rating Scale for Mania; CVLT-II: California Verbal Learning Test, 2nd Edition. Illness chronicity assessed via the total number of lifetime mood episodes.