Patient Perceptions of Physical Health and Bipolar Symptoms: The Intersection of Mental and Physical Health

Emily E Bernstein, BS,
Department of Psychology, Harvard University

Dustin J Rabideau, MS,
Department of Psychiatry, Massachusetts General Hospital

Margaret E Gigler, BA,
Department of Psychiatry, Massachusetts General Hospital

Andrew A Nierenberg, MD,
Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School

Thilo Deckersbach, PhD, and
Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School

Louisa G Sylvia, PhD
Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School

Abstract

Background—Affective symptoms and medical comorbidities have a negative impact on the course of bipolar disorder. The aim of this analysis was to examine how the perceptions of physical health and functioning in individuals with bipolar disorder relate to their mood symptoms.

Methods—We analyzed longitudinal data from the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) on the physical subscales of the Short Form Health Survey (SF-36) (physical functioning, role limitations due to physical problems, bodily pain, and general health).

Results—Participants' perception of their overall physical health predicted severity of mania/ hypomania, depression, and life satisfaction at concurrent and future visits. Perceptions of role limitations due to physical health problems predicted depressive symptoms and poor life satisfaction. Worse bodily pain predicted symptoms of mania/hypomania. Reports of specific or concrete physical limitations in daily life showed no associations with psychiatric symptoms at concurrent assessments, but did predict worse course of illness one year later. SF-36 scores showed significant, but small associations with the presence of medical comorbidities.

Corresponding Author: Emily E Bernstein, Department of Psychology, Harvard University, 1244 William James Hall, 33 Kirkland Street, Cambridge, MA 02138. Tel: (757) 374-2898, ebernstein@fas.harvard.edu.

Limitations—Perceptions of physical health and quality of life were self-report, potentially lending themselves to transient negative biases, particularly among depressed participants. Additionally, the SF-36 was selected as a generic, widely used measure; as a result it was not specific to the illness burden of bipolar disorder.

Conclusions—Overall, broad perceptions of poor physical health were associated with worse course of illness over the 24 months of the study. Though further research is warranted, changes in subjective physical health related quality of life, even independent of objective health changes, may offer important insight into global wellbeing and be targets of psychotherapy treatment.

Keywords

Bipolar Disorder; Quality of Life; Physical Health; Mood; Functioning

Bipolar disorder is a severe, recurrent mental illness, characterized by patient reports of poor quality of life, functioning, and high illness burden (Gadermann, Alonso, Vilagut, Zaslavsky, & Kessler, 2012; Sanchez-Moreno et al., 2009). Patients with bipolar disorder tend to report worse emotional health and overall wellbeing compared to the general population (Newnham, Harwood, & Page, 2007; Silveira et al., 2005). Such impairment in perceived quality of life is associated with more mood symptoms and worse mental health prognoses (Vojta, Kinosian, Glick, Altshuler, & Bauer, 2001).

Patient outcomes are further exacerbated by poor physical health, as the presence of medical comorbidities is significantly negatively associated with functioning, treatment response, and course of bipolar illness, including more frequent and persistent episodes (Kemp et al., 2010, 2014; Thompson, Kupfer, Fagiolini, Scott, & Frank, 2006); this relationship is particularly concerning as individuals with bipolar disorder suffer disproportionately high rates of medical comorbidity as compared to the general population (e.g. Krishnan, 2005). Previous studies have found that over 50% of individuals with bipolar disorder have at least one medical comorbidity (Kemp et al., 2014; Weber, Fisher, Cowan, & Niebuhr, 2011), which precipitates a higher rate of morbidity and mortality (e.g. Osby, Brandt, Correia, Ekbom, & Sparén, 2001) and a 30% shorter life expectancy for individuals in this population (Fagiolini & Goracci, 2009). Furthermore, psychiatric medications used to treat bipolar disorder can cause numerous physical side effects, such as drowsiness, rapid heartbeat, or weight gain (Kemp et al., 2010, 2014; Maina, Bechon, Rigardetto, & Salvi, 2013).

There are few studies that have addressed the prevalence of poor physical health related quality of life in bipolar disorder, and they have used only a single broad measure (Gutiérrez-Rojas et al., 2008; Zhang, Wisniewski, Bauer, Sachs, & Thase, 2006). Consequently, the relationships between specific attitudes or facets of functioning with clinical features of bipolar disorder remain unclear. To address this gap in the literature, we examine the longitudinal relationship between physical health related quality of life, mood symptoms, and life satisfaction in bipolar disorder. We predicted that individuals believing that they had poor physical health, lower levels of actual physical and occupational functioning, and the experience of more bodily pain would report having more depressive symptoms and manic/hypomanic symptoms as well as less life satisfaction.

Methods

Participants

We analyzed data from the naturalistic study arm of the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD), a multi-site study assessing longitudinal outcomes of 4,360 patients with bipolar disorder. Rationale and methods are detailed elsewhere (G. S. Sachs et al., 2003). Patients enrolled in STEP-BD were at least 15 years old and met DSM-IV criteria for bipolar I disorder, bipolar II disorder, cyclothymia, bipolar disorder not otherwise specified (NOS), or schizoaffective manic or bipolar subtypes, as determined by the Mini International Neuropsychiatric Interview (Sheehan et al., 1998), a semi-structured interview with a doctoral-level clinician. All study sites received Institutional Review Board approval before the start of the study. At baseline participant demographics and history of medical comorbidities (Affective Disorders Evaluation (ADE); G. Sachs, Guille, & McMurrich, 2002) were reported. From the latter, we drew data on chronic conditions, including cardiometabolic (hypertension, obesity, and diabetes), as well as other types (thyroid disorders, previous head injuries, migraines, epilepsy, multiple sclerosis, asthma, and peptic ulcer).

Assessments

The Short Form Health Survey (SF-36), an internationally validated generic instrument used across patient groups and illnesses, measures self-reported health related quality of life (Ware & Sherbourne, 1992). Given the aims of this analysis, we report data on the following physical health subscales: (1) Physical Functioning (physical abilities including independently bathing and dressing, walking various distances, physical flexibility and mobility, carrying and lifting household items, and engaging in moderate to vigorous physical activity); (2) Role Physical (degree one's roles are impacted by physical health problems, such as accomplishing less than desired or having more difficulty than usual performing roles); (3) Bodily Pain (perceived pain magnitude, frequency, and interference with daily activities); and (4) General Health (perceptions of general physical health, including comparisons to others or oneself one year ago, projections about future health, and global assessments of present health status). Scores of each subscale range from 0 (minimal satisfaction) to 100 (maximum satisfaction) and have good reliability and construct validity (Brazier et al., 1992; McHorney, Ware, Lu, & Sherbourne, 1994). Internal consistency and test-retest methods of the SF-36 subscales have shown high reliability, with most studies reliability statistics exceeding 0.7 (Manocchia et al., 1998; Ware, Snow, Kosinski, & Gandek, 1993).

The 10-item clinician-rated Montgomery-Asberg Depression Rating Scale (MADRS; Montgomery & Asberg, 1979) measures current depressive symptoms. Scores range from 0 to 60, with higher scores indicating more severe symptoms. The Young Mania Rating Scale (YMRS; Young, Biggs, Ziegler, & Meyer, 1978) is an 11-item clinician-rated assessment of manic/hypomanic symptom severity. Scores range from 0 to 56 with higher scores indicating more severe manic/hypomanic symptom presentation. The clinician-administered Range of Impaired Functioning Tool (LIFE-RIFT; Leon et al., 1999,2000), assesses participants' level of satisfaction and psychosocial functioning in four domains (work,

school, interpersonal relationships, recreational activities). Each domain is scored on a scale from 0 to 5, with 5 representing the greatest impairment, and a total score is derived from the sum. All assessments were administered at baseline, month 12, and month 24.

Statistical Analysis

We fit mixed effects linear regression models with subjects and study visits as random effects and the SF-36 subscales as fixed effects, to examine how the SF-36 physical health subscales uniquely predicted mental health outcomes, or depression (MADRS), mania (YMRS), and life functioning (LIFE-RIFT) over time. Work in other samples has identified demographic correlates of health-related quality of life (e.g. Nilsson and Kristenson, 2010); consistent with previous research, in our study age, gender, and BMI in particular were significantly associated with SF-36 physical health subscales at baseline. To avoid potential confounds, we thus also constructed models controlling for these characteristics. We ultimately excluded these variables from our final models if they did not improve the model fit, as indicated by likelihood ratio tests. All analyses included participants who completed at least the baseline SF-36 questionnaire (N=2,610; 60% female).

To assess how prior SF-36 reports might predict future clinical symptoms, we modified the above models to include baseline SF-36 scores as predictors of month 12 and month 24 MADRS, YMRS, and LIFE-RIFT scores. Notably, due to different patterns of missing data at each time point, our sample size was significantly reduced; only 488 participants were included in the prediction of month 12 symptoms and 289 in the prediction of month 24 symptoms.

Finally, using baseline medical comorbidity reports, we explored whether perceptions of physical health related quality of life were associated with diagnosed medical comorbidities. We computed Pearson correlation coefficients for baseline data, controlling for multiple comparisons, between SF-36 subscale scores, having any medical comorbidity, and having a cardiometabolic or other one specifically.

Results

Mixed effects linear regression analyses showed that Role Physical and General Health scores predicted depressive symptoms (MADRS) and life functioning (LIFE-RIFT) at all study visits (ps .005), such that reports of fewer occupational or personal role limitations due to physical health as well as better overall physical health predicted fewer depressive symptoms and greater life satisfaction (Table 1). Better General Health and Bodily Pain subscale scores negatively predicted the severity of manic/hypomanic symptoms (YMRS) across the 24 months (ps<.001). Physical Functioning, or one's ability to do specific activities, was not a significant predictor of clinical outcomes (ps>.05). Controlling for age, gender, and BMI led to consistent results.

Analyses also showed that initial assessments of General Health uniquely and negatively predicted MADRS (B=-.25, p<.001, t(483)=-4.55), YMRS (B=-.15, p=.01, t(483)=-2.57), and LIFE-RIFT (B=-.24, p<.001, t(483)=-4.36) scores one year later. They further negatively predicted MADRS (B=-.17, p=.02, t(284)=-2.31) and LIFE-RIFT scores at the

second year follow-up (B=-.16, p=.04, t(284)=-2.10). Baseline reports of Physical Pain negatively predicted YMRS scores at one year (B=-.12, p=.05, t(483)=-2.0). Additionally, though not predictive of concurrent clinical symptoms, Physical Functioning at baseline did uniquely predict MADRS (B=-.12, p=.03, t(483)=-2.23) and LIFE-RIFT scores at month 12 (B=-.21, p=.0001, t(483)=-3.90).

Finally, in the present sample, 2021 participants presented with at least one comorbidity, 1193 with at least one cardiometabolic condition specifically and 1620 with another type. Having at least one chronic medical comorbidity at baseline was significantly associated with all SF-36 subscores, meaning worse Physical Functioning (r= -.09), Role Physical (r= -.06), Pain (r= -.10), and General Health (r= -.09) scores (ps<.05). Similar patterns held when breaking comorbidities down into cardiometabolic or other. Notably, though all coefficients were significant, even when controlling for multiple comparisons, the effect sizes remained small.

Discussion

We found that participants' general perceptions of their physical health and bodily experiences, like pain, were associated with concurrent experiences of depression and quality of life, but how they viewed their actual ability to do specific activities (e.g., dressing, climbing stairs, carrying groceries) were not associated with concurrent mental health outcomes. General views on one's health status further predicted course of illness at 12 and 24 month follow-ups, such that individuals presenting in the study with more negative views of their physical wellbeing tended to have more severe mood symptoms and worse functioning across the two years of observation. These data suggest that addressing broad attitudes or thoughts about physical health are important in treating individuals with bipolar disorder as subjective perceptions seem to impact course of illness.

Results also showed that one's perceived physical health and experience of physical pain are associated with manic symptoms, both concurrently and 12 months later. This again seems to support the importance of cognitive re-structuring patient perceptions or fears about their physical health, as well as considering adjunct pain treatment for bipolar disorder. For example, musculoskeletal complaints, migraines, and anxious tension appear more common among bipolar patients than the general population and can be side effects of psychiatric medications (e.g. Low, du Fort, & Cervantes, 2003; Wallace & Gotto, 2008). Findings support the introduction of stress management or relaxation training (e.g. mediation, yoga, mindfulness) into treatments for bipolar disorder to reduce patients' sensations of pain and their consequences for course of illness, particularly mania and hypomania.

Overall, these data extend the current literature by demonstrating how different facets of physical health relate to the clinical features of bipolar disorder and life functioning. It is notable in a population suffering from disproportionately high medical burden that general conceptions of physical health status, more consistently than more specific or concrete symptoms like difficulty bending over or walking long distances, seem to influence severity of mood symptoms and life satisfaction. Furthermore, though the associations between medical comorbidities and perceptions of health status were significant, they were

consistently small, highlighting a seeming disconnect between diagnosed medical health issues and physical health related quality of life. Thus, patients could be conflating mental and physical health symptoms. In these ways, it may be important to assess both objective medical conditions and patients' subjective understandings of their health.

This study should be considered in light of several limitations. First, these data were taken from a longitudinal, naturalistic study and thus, causality cannot be determined. Additionally, perceptions of physical health and quality of life were self-report, potentially lending themselves to transient negative biases, particularly among depressed participants. The SF-36 was selected as a generic, widely used measure of health related quality of life; as a result it was not specific to the illness burden experienced by individuals with bipolar disorder, for example, not including a targeted question about sleep. Similarly, not all possible medical comorbidities or the severity of a given condition could be captured in the present assessments.

Findings highlight the beneficial role that psychotherapy could play for such patients in targeting and modifying the way they think about their health. Cognitive re-structuring around these perceptions could help participants to differentiate between poor health or physical impairments and physical symptoms of depression or mania, such as low energy, or to not let individual symptoms color larger, overarching concepts of one's health and prognosis. Results support calls for more holistic and collaborative care for patients to address the interplay between physical health, mood symptoms, and cognitive processes, such as integrative lifestyle interventions to increase general feelings of vitality, levels of physical activity, and pain management. Thinking more about different facets of wellness, including medical comorbidities, clinical symptoms, life functioning, and perceptions of health, could improve treatment outcomes and quality of life for individuals with bipolar disorder.

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Highlights

- We examine beliefs about physical health and functioning in bipolar disorder.

- Perceptions of poor physical health predicts more severe clinical symptoms.

- The experience of bodily pain positively predicts symptoms of mania/hypomania.

- Actual physical limitations showed no associations with psychiatric symptoms.

Table 1

Concurrent SF-36 scores as predictors of depression, mania, and life satisfaction scores

SF-36 Subscale	MADRS		YMRS		LIFE-RIFT	
	Beta[*]	p-value[*]	Beta[*]	p-value[*]	Beta[*]	p-value[*]
General Health	-.200	<.001	-.129	<.001	-.146	<.001
Physical Functioning	.039	.103	.015	.590	-.035	.150
Role Physical	-.076	.001	-.039	.148	-.070	.002
Pain	-.033	.160	-.148	<.001	-.017	.475

[*]
Based on mixed effects linear regression models with subjects and study visits as random effects and the SF-36 subscales as fixed effects.

Note. SF-36: Short Form Health Survey; MADRS: Montgomery-Asberg Depression Rating Scale; YMRS: Young Mania Rating Scale; LIFE-RIFT: Range of Impaired Functioning Tool.