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Psychosocial Impairment Associated With Bipolar II Disorder

Camilo J. Ruggero, Ph.D., Iwona Chelminski, Ph.D., Diane Young, Ph.D., and Mark Zimmerman, M.D.

From the Department of Psychiatry and Human Behavior, Brown Medical School, Rhode Island Hospital, Providence, RI.

Abstract

Background—Significant research has looked at the psychosocial impairment associated with bipolar I disorder and major depressive disorder. Far less is known about the impact of bipolar II disorder. The present study assessed the social and work impairment associated with bipolar II disorder and whether these are more or less severe than those associated with bipolar I disorder or major depressive disorder.

Methods—Psychiatric outpatients with bipolar II disorder ($n = 89$), bipolar I disorder ($n = 45$) and major depressive disorder ($n = 1,251$) were assessed cross-sectionally by highly trained raters using semi-structured interviews. Participants were in a major depressive episode. Groups were compared on a series of indicators of psychosocial functioning.

Results—Bipolar I and II disorder were associated with greater absenteeism from work due to psychopathology compared to major depressive disorder. The bipolar disorders also had higher rates of hospitalization and suicide attempts. Bipolar II disorder had fewer hospitalization than bipolar I disorder which may have led to slightly less severe work impairment. Both conditions had similar rates of serious suicide attempts.

Limitations—The study was cross-sectional and retrospective. Furthermore, the sample consisted of outpatients seeking treatment, limiting generalizability to other settings.

Conclusion—Bipolar II disorder is associated with serious work impairment and a high number of serious suicide attempts. The level of impairment is more similar than it is different from that associated with bipolar I disorder. Clinicians would be mistaken to presume that the “softer” bipolar spectrum, specifically bipolar II disorder, is less impairing than bipolar I disorder.

Keywords

bipolar II disorder; psychosocial functioning

Reprint requests to: Camilo J. Ruggero, Ph.D., Bayside Medical Center, 235 Plain Street, Suite 501, Providence, RI 02905. (e-mail: Camilo_Ruggero@brown.edu).

Conflict of Interest

All other authors declare that they have no conflicts of interest.

Contributors

Author Ruggero managed the literature searches, undertook the statistical analysis, and wrote the manuscript. Author Zimmerman designed the study and wrote the protocol. Authors Chelminski and Young assisted with data management and contributed to further drafts of the paper. All authors contributed to and have approved the final manuscript.

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1. Introduction

The World Health Organization (WHO) has consistently ranked bipolar disorder as one of the top ten leading causes of disability world-wide among adults (Ayuso-Mateos, 2006; Murray and Lopez, 1997). Few studies, however, have considered the psychosocial consequences associated with bipolar II disorder or whether these are more or less severe than those seen in bipolar I disorder. Almost all work reporting the impact of “bipolar disorder” is based on participants with bipolar I disorder, or might incorporate a small group of people with bipolar II disorder without explicitly comparing the two groups (e.g., Kessler et al., 2006; Altshuler et al., 2006). These studies note the serious psychosocial consequences of bipolar I disorder, including impairment in nearly all areas of psychosocial functioning as well as increased risk of death from suicide (see Simon, 2003; Kleinman et al., 2003, for reviews).

Unfortunately, with just a few exceptions, the literature does not address the question of whether the broader spectrum, specifically bipolar II disorder, is also associated with serious impairment. A priori, clinicians might assume more serious impairment with bipolar I disorder. As originally conceptualized (Dunner et al., 1975) and codified in the *Diagnostic and Statistical Manual of Mental Disorder, fourth edition, text revision (DSM-IV-TR)* (American Psychiatric Association, 2000), the primary distinction between the two disorders is based not on the duration of manic symptoms but rather their severity: manic episodes in bipolar I disorder are severe enough to cause major disruptions in a person’s life, such as hospitalization, whereas hypomanic episodes do not. While true, the bipolar II diagnosis requires episodes of depression, which carry their own social and economic burden (Wells et al., 1989). Indeed, some studies have found that, at least among people with bipolar I disorder, past number of depressive episodes more strongly predicted functioning than mania (MacQueen et al., 2000). As a result, it remains unclear whether one disorder is associated with worse psychosocial functioning than the other.

In recent years, there has been increasing interest in the “soft” bipolar spectrum. This is no doubt related in part to research (e.g., Akiskal et al., 2000) suggesting that these disorders are under-recognized. Traditional estimates indicate lifetime prevalence rates of bipolar II disorder of about 1–2%, but others (e.g., Angst, 1998) have argued prevalence rates are closer to 5.5%. Including disorders that do not currently meet *DSM-IV* criteria for bipolar I or II disorder (e.g., “brief hypomania”) raises this estimate up to 20% (Angst, 1998).

Regardless of the prevalence, there is a need to clarify the impact of bipolar II disorder on functioning. The handful of studies that have considered the impact of bipolar II disorder offer mixed results. The National Institute of Mental Health Collaborative Depression Study (CDS; Judd et al., 2003, 2005), perhaps the most rigorous of these studies, prospectively assessed functioning in a group of participants with bipolar I and II disorder. They found that depressive symptoms were more disabling than hypomanic ones; surprisingly, they also found depressive symptoms to be as disabling if not more disabling than manic symptoms. Consequently, after controlling for difference in depression severity, they found no overall difference in psychosocial disability between bipolar I and II disorder. To the extent that depression is more chronic in bipolar II disorder (Judd et al., 2003), psychosocial impairment may be worse in bipolar II disorder, not bipolar I disorder.

Other studies offer inconsistent results about the impact of bipolar II disorder and whether impairment is more or less severe than in bipolar I disorder. In a small sample, Robb and colleagues (1997; also see Cooke et al., 1996) found greater self-reported intrusiveness from their disorder in bipolar II disorder compared to bipolar I disorder, although these differences may have been due entirely to greater current levels of depression in the bipolar II group. Judd and Akiskal (2003) found similar rates of social disruption among various subtypes of bipolar

disorder in a reanalysis of data from the Epidemiological Catchment Area study, although there was a trend for increased risk of suicidal behavior in the bipolar II group. Hajek and colleagues (2005) found no difference between bipolar I and II disorder on a global measure of functioning. In contrast to these studies, Suppes et al. (2004) found that a group of outpatients with bipolar I disorder had an earlier age of onset, more hospitalizations, and lower income compared to a group with bipolar II or bipolar NOS disorder, despite that the bipolar II group had significantly more past episodes of depression.

In sum, considerable work has documented the psychosocial impact of bipolar I disorder, but far less research has looked at the consequences associated with bipolar II disorder. The research that does exist is inconclusive about whether bipolar II disorder is more or less impairing than other affective disorders, although findings from more rigorous studies suggest that depressive symptoms, not manic ones, exert a greater impact on a person's psychosocial functioning.

The present work from the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project sought to clarify the psychosocial consequences associated with bipolar II disorder and test whether these are more or less severe than those observed in bipolar I or major depressive disorder. A group of participants with bipolar II disorder, bipolar I disorder and major depressive disorder (MDD) were compared on a series of indicators of functioning, including work functioning (i.e., absenteeism), social functioning, divorce rates, global assessment of functioning, and suicide risk. Participants in all three groups were in a current depressive episode. Unlike previous work, the present study was careful to determine the need to control for differences in baseline characteristics (e.g., depression severity, demographics) that might produce differences in functioning between groups. Given trends from previous studies (Judd et al., 2005), we tentatively hypothesized that the bipolar II group would have worse functioning across measures but that this difference would be accounted for by differences in current or past symptoms of depression.

2. Methods

2.1 Subjects

Participants for this study were 1,385 psychiatric patients who had sought treatment in the outpatient practice of Rhode Island Hospital's Department of Psychiatry in Providence, Rhode Island. One group of participants ($n = 89$) was diagnosed with bipolar II disorder. Another group ($n = 45$) had a diagnosis of bipolar I disorder and a third group ($n = 1,251$) had a diagnosis of a major depressive disorder. All participants were seeking treatment during a major depressive episode. No participant was in a manic or hypomanic episode. Table 1 reports the sample's demographic and clinical characteristics.

All participants had enrolled in the MIDAS project; this unique study integrates assessment methods typical of researchers into a routine clinical practice (Zimmerman, 2003). The practice predominantly serves individuals with medical insurance on a fee-for-service basis, and is distinct from the hospital's outpatient residency training clinic that mostly serves lower income, uninsured patients. The primary referral source is primary care physicians and psychotherapists.

Patients who enter this practice and who consent to participate in research are administered a battery of interview assessments (see Measures). The Rhode Island Hospital's institutional review committee approved the research protocol, and all patients provided written informed consent.

Diagnostic Rater Training and Reliability

All measures, including those establishing diagnosis, were administered by highly trained raters who were monitored throughout the project to minimize rater drift. Raters are Ph.D.-level psychologists and research assistants with college degrees in the biological or social sciences. Research assistants received 3 to 4 months of training during which they observed at least 20 interviews and were observed and supervised in their administration of 20 more evaluations. Psychologists only observed 5 interviews; however, they were observed and supervised in their administration of 15 to 20 interviews. At the end of training, raters were required to demonstrate exact or near exact agreement with a senior diagnostician on five consecutive evaluations. Throughout the project, ongoing supervision is carried out through weekly case conferences involving all raters. Furthermore, the director of the MIDAS project (MZ) reviews every interview on an item-by-item basis and individually discusses each interview with raters. Joint-interview diagnostic reliability for SCID diagnoses was assessed in a subset of patients ($n = 48$) in the MIDAS project. Reliability estimates (kappa) for major depressive disorder and bipolar disorders were .91 and .85, respectively.

2.2. Measures

Clinical Measures—To assess for DSM-IV Axis I disorders, all participants were administered the Structured Clinical Interview for DSM-IV (SCID; First et al., 1995). The SCID was modified so that ratings for the Schedule of Affective Disorder (SADS; Endicott and Spitzer, 1978) were also gathered. Current depressive illness severity was measured using the Clinical Global Impression - Severity scale (CGI-S; Guy, 1976).

Outcome Measures—The Global Assessment of Functioning scale (derived from the Global Assessment Scale; Endicott et al., 1976) is an interviewer-rated global measure of overall symptom severity and functioning. Scores range from 0 to 100 with lower scores indicating poorer functioning. As part of the clinical interview, information was also gathered on the number of serious and non-serious suicide attempts, using SADS criteria and anchors. Serious suicide attempts were any in which there was an actual medical threat (e.g., cut throat, briefly unconscious) to the person's life or there was serious intent to kill him or herself. These attempts were distinguished from non-serious attempts, in which there was only mild medical threat (e.g., 10 aspirins) or the person's intention contained some ambivalence.

Raters also gathered information regarding participants social and work functioning history over the last five years. Ratings for social functioning were from SADS items, with ratings ranging from "superior social functioning" to "grossly inadequate functioning." Each rating was accompanied by anchors to guide the rater's choice. Moreover, raters used multiple queries to assess level of social functioning in the past five years. Queries included questions about the number of confidants as well as the frequency with which participants had social contact. Work functioning was assessed by determining the number of days in the last five years for which the patient had been unable to work due to their psychiatric illness. People not expected to work were considered to have not lost any days of work due to their illness. The ratings also did not include days out of work due to other reasons (e.g., medical illness).

2.3 Statistical Analyses

For all analyses, a family wise error rate of .05 was set. Bonferroni adjustments to this level were made if multiple tests were carried out. Prior to conducting primary analyses, preliminary data screening steps were taken. Great care was made to avoid missing data during the study, such that almost no missing data (i.e. less than 1%) existed on primary, interviewer gathered outcome data or on predictors; as such, standard deletion methods were deemed appropriate (Allison, 2002). Analyses were then performed to detect outliers (e.g., inspection of cases with large standardized scores) and test assumptions (e.g., normality, homogeneity of variances).

Several outliers were detected. However, all remained in acceptable ranges and were not removed. All variables except for hospitalizations had acceptable skew and kurtosis. Furthermore, the work functioning variables violated the homogeneity of variances assumption. These two variables were logarithmically transformed. After transformation, they had acceptable skew and kurtosis and did not violate assumptions.

Following preliminary data screening, the need to control for confounds in the primary analyses was next considered. A confound was regarded as any baseline variable (e.g., age) that was significantly different in the three groups *and* was associated with outcomes; if only the former was true, the variable represents a covariate rather than a true confound and was not necessarily controlled for.

Primary analyses were next carried out. These focused on group differences in psychosocial functioning outcomes. A one-way ANOVA was performed on each outcome (i.e., GAF, work functioning, social functioning, divorces, suicide attempts, and current self-reported functioning and quality of life) with group (i.e., bipolar I, bipolar II, and MDD) as the independent variable. When it was necessary to control for confounds, an ANCOVA was used instead as long as assumptions regarding the covariate were not violated (e.g., homogeneity of regression coefficients). Significant omnibus tests were followed by post hoc tests.

3. Results

Groups did not differ in the severity of current depressive episodes (i.e., CGI-S; see Table 1). Therefore, this variable was not controlled for in subsequent analyses. Several baseline variables, however, were identified as potential confounds, in that they differed between groups (Table 1). These included age, age of illness onset, past number of depressive episodes and hospitalizations. Only the last three were significant after adjusting the familywise error rate for multiple tests.

The bipolar I and II groups had younger ages of onset and significantly more past episodes of depression than the MDD group. In both cases, however, the bipolar I and II groups did not differ from each other. There was, however, a significant difference among all three groups with respect to the number of times they had been hospitalized. The bipolar I group had significantly more hospitalizations than the bipolar II group. In turn, the latter group had significantly more hospitalizations than the MDD group. Exploratory analyses considered whether differences in hospitalization were due to more depressive episodes or to differences in age of onset: after controlling for both variables, there continued to be significant group differences, $F(2, 1377) = 35.93, p < .001$ in the number of hospitalizations, with post hoc tests showing significant differences among all three conditions.

Regarding which variables represented confounds, the three variables were correlated. Number of hospitalizations was most strongly associated with outcomes. After controlling for it, only age of illness onset was significantly associated with outcomes. Therefore, it was decided to control for both number of past hospitalizations as well as age of illness onset in subsequent analyses. Controlling for these variables did not violate the homogeneity of regression slopes assumption for any of the primary outcome variables.

Table 2 presents the primary outcome means and frequencies (in raw scores) for each group. The bipolar I and II groups had significantly lower GAF scores, higher work impairment ratings, and significantly more suicide attempts than the MDD group. GAF scores in the bipolar I and II groups were in the upper end of the “serious symptoms” or “serious impairment” range, whereas the average range for the MDD group was at the lower end of the “moderate symptoms” or “moderate difficulty” range. Almost 3 in 5 patients with bipolar I disorder had missed over a year of work due to their psychiatric illness. The rate was 1 in 3 for patients with

bipolar II disorder. In contrast, only about 1 out of every 6 patients with MDD disorder had missed more than a year of work due to psychiatric illnesses. With respect to suicide attempts, almost 1 in 3 patients with bipolar I or II disorder had made at least one serious (i.e., high risk of death) suicide attempt. The rate was significantly lower in the MDD group, (i.e., slightly more than 1 in 10). The three groups did not differ in terms of their social functioning, with over 60% of all 3 groups reporting social functioning that corresponded with “good” or better. More patients with bipolar I disorder had social functioning considered to be “grossly inadequate,” although the difference was not significant.

Analyses described in Table 2 were repeated, this time controlling for differences in number of hospitalizations and age of illness onset. As before, there were no group differences on social functioning. The main group effect on GAF scores was no longer significant after controlling for confounds, $F(2, 1376) = .63, p = .53$. Similarly, the rates of serious suicide attempts were no longer different between groups after controlling for age of illness onset and hospitalizations, $\chi^2(2) = .65, p = .73$. The same was not true for work functioning. Even after controlling for differences in hospitalization and age of illness onset, there was a significant main effect for group on work functioning, $F(2, 1376) = 7.23, p = .001$. Post hoc tests revealed that this was due to a significant difference between the bipolar I and MDD group. There was no significant post hoc difference between the bipolar II and the other groups after controlling for confounds.

4. Discussion

Considerable work has explored the psychosocial impact of major depressive disorder and bipolar I disorder, yet few studies have looked at psychosocial impairment in bipolar II disorder. Given the growing interest in the “soft” spectrum, more attention to the burden associated with these disorders is needed. Indeed, there is some evidence to suggest that major depressive episodes, more common in bipolar II disorder, lead to greater impairment than hypomanic or manic episodes (MacQueen et al., 2000).

The present study compared psychosocial functioning associated with bipolar II disorder to the functioning seen in the more widely studied conditions of bipolar I and major depressive disorder. We were careful to take into account the possibility that impairment measures may have been confounded with current or lifetime depression.

Several findings emerged. First, the three conditions had different effects on work functioning. Second, we found that both bipolar disorders were associated with greater hospitalizations than depression alone. Third, both bipolar I and II disorder were associated with a greater number of serious suicide attempts than major depressive disorder. Finally, we found similar levels of social functioning across the conditions. Overall, the psychosocial impact associated with bipolar II disorder was much more similar than it was different from the impact associated with bipolar I disorder. There was no indication from the current results that bipolar I and II differed with respect to the impact of depression. Rather, when differences existed between the two conditions, they could be accounted for by the higher rate of hospitalization in the bipolar I group.

Before discussing implications from these findings, several limitations deserve mention. Our sampling was not random. Rather, all participants were outpatients seeking treatment; therefore, these results may not generalize to other types of psychiatric practices (e.g., inpatient settings). We also can not rule out the possibility that the impairment associated with bipolar II disorder may be due to a selection bias, given that more seriously ill bipolar II patients are more likely to go into treatment.

Our design was cross sectional, making our models of causation tentative. Indeed, our findings remain associations between bipolar disorders and psychosocial consequences rather than predictive models. It is not definite that bipolar disorders lead to more work impairment; the opposite, though unlikely, may be the case. The causal relationship between hospitalizations, age of illness onset and work impairment is similarly uncertain. When we controlled for number of hospitalizations, the bipolar I and II groups did not differ from each other. However, hospitalizations may simply reflect the disorder's severity, so a model that controls for it before comparing work impairment across the two groups may be inappropriate. Similarly, we cannot rule out the possibility that a third variable, not measured in our study and not inherent to the bipolar diagnosis, was the cause of more serious impairment in the bipolar groups. We did not have a healthy, non-psychiatric control group. This limitation is mitigated in part by studies that have already shown that bipolar I and major depressive disorder lead to impairment.

One final potential limitation of the current work involves our method of diagnosing groups. We made diagnoses based on DSM-IV criteria and using the SCID. While a widely used assessment instrument, serious concerns exist regarding the validity of DSM-IV criteria for hypomania as well as the validity of the SCID to diagnose these conditions (Akiskal & Benazzi, 2005). Specifically, the 4-day criteria for hypomania may not be empirically supported; moreover, the SCID's reliance on a mood skip-out may lead to misdiagnosis. The relevance for the current study from these potential problems is that many participants in the MDD group may in fact have belonged to the bipolar spectrum. Depending on the level of impairment among these possibly misdiagnosed participants, it could have made the bipolar II group appear more or less impaired. Future work needs to carefully consider that subgroups of MDD patients may in fact belong to the bipolar spectrum by assessing hypomanic episodes lasting less than 4 days, that are antidepressants-induced, and by considering alternative assessment methods (cf. Akiskal & Benazzi, 2005).

One of the primary findings from the present study was the high toll on work functioning associated with bipolar II disorder. One third of people with the condition had missed over a year of work in the last five years due to the illness. The average amount of time patients with bipolar II disorder were not working due to their illness in the last 5 years was between 6 months and a year. These rates fall between the amount of time out of work associated with bipolar I disorder and that associated with major depressive disorder. Although there was more absenteeism in patients with bipolar I disorder, the difference appeared to be related entirely to them having been hospitalized more frequently. The work losses faced by patients with bipolar II disorder are substantial, particularly since our measure of absenteeism was conservative and may represent an underestimate: it only counted days missed if it was specifically due to psychopathology (rather than medical illness) and only in those patients who were expected to work (i.e., excluded students, retired people, etc.). A central message from the present study, therefore, is that even "soft" bipolar disorders, specifically bipolar II disorder, lead to major impairment in people's ability to work.

In contrast to work functioning, we found no evidence that the disorders were associated with differences in social functioning. The small non-significant differences that exist suggest that even a larger sample size with more power would still fail to find a major difference. Why the disorders lead to differences in work but not social functioning is unclear. It may be that our measure of social functioning was not sensitive enough to detect smaller gradations in functioning. Alternatively, it may simply be that work functioning is far less resilient to the effects of a mood disorder than social skills and social bonds. Indeed, over 60% of all three groups reported "good" functioning or better in the last 5 years. An example anchor for this level of social functioning was "1 or 2 special friends that he saw from time to time and was fairly close to." The lack of a healthy control group makes it hard to ascertain whether all

groups had moderate social functioning or whether all groups equally suffered in their social functioning from the effects of each disorder.

Bipolar II disorder was also associated with high rates of hospitalization and high rates of suicide attempt. Over 40% of the bipolar II group had been hospitalized at least once compared to only 26% of the major depressive disorder group. This was still less than the bipolar I group (over 70% had been hospitalized at least once). Perhaps most troubling, bipolar II disorder, similar to bipolar I disorder, was associated with a high rate of past serious suicide attempts. The rate of attempts in bipolar II disorder (27%) was almost as high as in bipolar I disorder (33%). Moreover, these rates reflect serious suicide attempts (i.e. attempts with a high risk for death) rather than merely suicidal gestures that might not be lethal (e.g., self-harm gestures). This result underscores a major conclusion from the present work, namely, that it would be a mistake for clinicians to presume that bipolar II disorder involves less serious consequences compared to bipolar I disorder. It also confirms that bipolar I and II disorder are more impairing than major depressive disorder alone.

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References

- Akiskal HS, Bourgeois ML, Angst J, Post R, Moller H, Hirschfeld R. Reevaluating the prevalence of and diagnostic composition within the broad clinical spectrum of bipolar disorders. *J Affect Disord* 2000;59:S5–S30. [PubMed: 11121824]
- Akiskal HS, Benazzi F. Optimizing the detection of bipolar II disorder in outpatient private practice: Toward a systematization of clinical diagnostic wisdom. *J Clin Psychiatry* 2005;66:914–921. [PubMed: 16013908]
- Allison, PD. Missing data. Thousand Oaks, CA: Sage; 2002.
- Altshuler LL, Post R, Black DO, Keck PE, Noeln WA, Frye MA, et al. Subsyndromal depression is associated with functional impairment in patients with bipolar disorder. *J Clin Psychiatry* 2006;67:1551–1560. [PubMed: 17107246]
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th edition – text revision. Washington, DC: Author; 2000.
- Angst J. The emerging epidemiology of hypomania and bipolar II disorder. *J Affect Disord* 1998;50:143–151. [PubMed: 9858074]
- Ayuso-Mateos, JL. Global Burden of Bipolar Disorder in the Year 2000: Draft 21-06-06. 2006. http://www.who.int/healthinfo/statistics/bod_bipolar.pdf
- Cooke RG, Robb JC, Young LT, Joffe RT. Well-being and functioning in patients with bipolar disorder assessed using the MOS 20-item Short Form (SF-20). *J Affect Disord* 1996;39:93–97. [PubMed: 8827417]
- Dunner DL, Gershon ES, Goodwin FK. Heritable factors in the severity of affective illness. *Biol Psychiatry* 1975;11:31–42. [PubMed: 1260075]
- Endicott J, Spitzer RL. A diagnostic interview: the schedule for affective disorders and schizophrenia. *Arch Gen Psychiatry* 1978;35:837–844. [PubMed: 678037]
- Endicott J, Spitzer RL, Fleiss JL, Cohen J. The Global Assessment Scale: a procedure for measuring overall severity of psychiatric disorders. *Arch Gen Psychiatry* 1976;33:766–771. [PubMed: 938196]
- First, MB.; Spitzer, RL.; Williams, JBW.; Gibbon, M. Structured Clinical Interview for DSM-IV (SCID). Washington, DC: American Psychiatric Association; 1995.

- Guy, W. Clinical Global Impressions scale ECDEU Assessment Manual for Psychopharmacology US Dept Health, Education, and Welfare publication (AMD) 76-338. Rockville, Md: National Institute of Mental Health.; 1976.
- Hajek T, Slaney C, Garnham J, Ruzickova M, Passmore M, Alda M. Clinical correlates of current level of functioning in primary care-treated bipolar patients. *Bipolar Disord* 2005;7:286-91. [PubMed: 15898967]
- Judd LL, Akiskal HS. The prevalence and disability of bipolar spectrum disorders in the US population: re-analysis of the ECA database taking into account subthreshold cases. *J Affect Disord* 2003;73:123-131. [PubMed: 12507745]
- Judd LL, Akiskal HS, Schettler PJ, Endicott J, Leon AC, Solomon DA, Coryell W, Maser JD, Keller MB. Psychosocial disability in the course of bipolar I and II disorders: a prospective, comparative, longitudinal study. *Arch Gen Psychiatry* 2005;62:1322-30. [PubMed: 16330720]
- Judd LL, Schettler PJ, Akiskal HS, Maser J, Coryell W, Solomon D, Endicott J, Keller M. Long-term symptomatic status of bipolar I vs. bipolar II disorders. *Int J Neuropsychopharmacol* 2003;6:127-37. [PubMed: 12890306]
- Kessler RC, Akiskal HS, Ames M, Birnbaum H, Greenberg P, Robert MA, Jin R, Merikangas KR, Simon GE, Wang PS. Prevalence and Effects of Mood Disorders on Work Performance in a Nationally Representative Sample of U.S. Workers. *Am J Psychiatry* 2006;163:1561-1568. [PubMed: 16946181]
- Kleinman L, Lowin A, Flood E, Gandhi G, Edgell E, Revicki D. Costs of bipolar disorder. *Pharmacoeconomics* 2003;21:601-22. [PubMed: 12807364]
- MacQueen GM, Young LT, Robb JC, Marriott M, Cooke RG, Joffe RT. Effect of number of episodes on wellbeing and functioning of patients with bipolar disorder. *Acta Psychiatr Scand* 2000;101:374-81. [PubMed: 10823297]
- Murray, C.; Lopez, A. The Global Burden of Disease. Cambridge, MA: Harvard University Press; 1996.
- Robb JC, Cooke RG, Devins GM, Young LT, Joffe RT. Quality of life and lifestyle disruption in euthymic bipolar disorder. *J Psychiatr Res* 1997;31:509-17. [PubMed: 9368193]
- Simon, GE. *Biol Psychiatry*. 54. 2003. Social and economic burden of mood disorders; p. 208-215.
- Suppes T, Leverich GS, Keck PE, Nolen WA, Denicoff KD, Altshuler LL, et al. The Stanley Foundation Bipolar Treatment Outcome Network. II Demographics and illness characteristics of the first 261 patients. *J Affect Disord* 2001;67:45-59. [PubMed: 11869752]
- Wells K, Stewart A, Hays R, Burnam A, Rogers W, Daniels M, et al. The functioning and well-being of depressed patients: Results from the Medical Outcomes Study. *JAMA* 1989;262:914-919. [PubMed: 2754791]
- Zimmerman M. What should the standard of care for psychiatric diagnostic evaluations be? *J Nerv Ment Dis* 2003;191:281-286. [PubMed: 12819546]
- Zimmerman M, Sheeran T, Young D. The Diagnostic Inventory for Depression: A self-report scale to diagnose DSM-IV for major depressive disorder. *J Clin Psychol* 2004;60:87-110. [PubMed: 14692011]

Table 1

Demographic and Clinical Variables by Group (N = 1,385)

Variable	Bipolar I Disorder (BPI) n = 45	Bipolar II Disorder (BPII) n = 89	Major Depressive Disorder (MDD) n = 1,251	F or χ^2	p	Significant Post Hoc Differences
Gender						
Male	33%	39%	34%			
Female	67%	61%	66%	1.23	.54	na
Marital Status						
Married	44%	37%	49%			
Divorced/Separated	18%	29%	22%			
Never Married	38%	34%	29%	6.87	.14	na
Race/Ethnicity						
Caucasian	89%	95%	85%			
Hispanic	2%	0%	5%			
African American	4%	0%	4%			
Other	4%	5%	6%	9.62	.14	na
Education						
Less than HS	11%	8%	11%			
HS or some college/	53%	57%	55%			
College or beyond	36%	35%	34%	.83	.93	na
Age	34.78 (10.49)	35.90 (11.08)	38.82 (12.32)	4.57*	.01	BPI, BPII < MDD
CGI-S	2.93 (.99)	2.83 (.94)	2.88 (.87)	.23	.80	na
Length of current depressive episode (wks) ^a	75.84 (97.20)	79.56 (95.62)	95.70 (101.03)	1.81	.17	na
Age of illness onset	16.80 (10.36)	16.43 (8.89)	26.14 (13.82)	30.74**	<.001	BPI, BPII < MDD
# of depressive episodes ^a	10.36 (8.43)	9.57 (8.12)	3.43 (4.68)	94.85**	<.001	BPI, BPII > MDD
# of previous dep episodes						
0	11%	15%	46%	89.68**	<.001	BPI, BPII < MDD
1 to 2	27%	25%	30%			
3 or more	62%	60%	24%			
% ever hospitalized	71%	40%	26%	49.65**	<.001	BPI > BPII > MDD
# of hospitalizations	2.18 (2.00)	1.01 (1.66)	.48 (1.03)	57.41**	<.001	BPI > BPII > MDD

Note. Values for continuous variables represent means (with standard deviations).

^aMaximum duration recorded was 260 weeks; maximum depressive episodes recorded was 20.

* $p < .05$,

** $p < .01$.

Table 2

Primary Outcomes by Group (N = 1,385)

Variable	Bipolar I Disorder (BPI) n = 45	Bipolar II Disorder (BPII) n = 89	Major Depressive Disorder (MDD) n = 1,251	F or χ^2	p	Significant Post Hoc Differences
GAF	48.16(8.85)	48.61(8.79)	50.86(8.85)	4.51*	.01	BPI, BPII < MDD ^a
SADS Work Functioning Rating	4.44 (2.71)	3.19 (2.44)	2.34 (1.88)	31.96**	<.001	BPI > BPII > MDD ^b
Absenteeism Due to Psychopathology						
Less than 1 yr	42%	67%	84%	60.04**	<.001	BPI > BPII > MDD ^b
More than 1 yr	58%	33%	16%			
SADS Social Functioning Rating	3.38 (1.37)	3.18 (1.19)	3.19 (1.24)	.52	.59	na
Social Functioning						
Good to Superior	62%	62%	66%	5.56	.23	na
Fair	16%	27%	21%			
Poor to Gross	22%	11%	13%			
# of Divorces	.49 (.84)	.37 (.57)	.37 (.63)	.78	.46	na
% ever having been divorced	33%	33%	30%	.38	.83	na
# of serious suicide attempts	.91 (2.09)	.63 (1.48)	.25 (1.03)	11.98**	<.001	BPI, BPII > MDD ^a
% ever having made a serious suicide attempt	33%	27%	13%	25.18**	<.001	BPI, BPII > MDD ^a

Note. Means and significance test are based on raw, untransformed scores. They are not adjusted for group differences in confounds.

^a After adjusting for confounds, groups no longer differed.

^b After adjusting for confounds, the bipolar I and MDD groups differed, but the bipolar II group did not differ from either of these.

* p < .05,

** p < .01.