

Psychosocial morbidity associated with bipolar disorder and borderline personality disorder in psychiatric out-patients: comparative study

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Background

The morbidity associated with bipolar disorder is, in part, responsible for repeated calls for improved detection and recognition. No such commentary exists for the improved detection of borderline personality disorder. Clinical experience suggests that it is as disabling as bipolar disorder, but no study has directly compared the two disorders.

Aims

To compare the levels of psychosocial morbidity in patients with bipolar disorder and borderline personality disorder.

Method

Patients were assessed with semi-structured interviews. We compared 307 patients with DSM-IV borderline personality disorder but without bipolar disorder and 236 patients with bipolar disorder but without borderline personality disorder.

Results

The patients with borderline personality disorder less frequently were college graduates, were diagnosed with more comorbid disorders, more frequently had a history of substance use disorder, reported more suicidal ideation at

the time of the evaluation, more frequently had attempted suicide, reported poorer social functioning and were rated lower on the Global Assessment of Functioning. There was no difference between the two patient groups in history of admission to psychiatric hospital or time missed from work during the past 5 years.

Conclusions

The level of psychosocial morbidity associated with borderline personality disorder was as great as (or greater than) that experienced by patients with bipolar disorder. From a public health perspective, efforts to improve the detection and treatment of borderline personality disorder might be as important as efforts to improve the recognition and treatment of bipolar disorder.

Declaration of interest

None.

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Bipolar disorder is a serious illness resulting in significant psychosocial morbidity, reduced health-related quality of life and excess mortality. Bipolar disorder incurs high public health and economic costs,^{1,2} and places a stark burden on patients including an increased risk of suicide,^{3,4} and marked disruptions in work and social functioning.^{5–7} Although the breadth of research is not as robust, borderline personality disorder is also associated with significant psychosocial morbidity, reduced health-related quality of life and excess mortality.^{8,9} Several review articles have examined the interface between the two disorders.^{10–17} Citing high levels of comorbidity between these disorders and similarities in phenomenology, some reviewers have suggested that borderline personality disorder should be included under the bipolar spectrum umbrella, whereas others support the maintenance of their distinction. Noteworthy in these reviews is the scarcity of studies comparing patients with the two disorders. We are aware of only one study that compared patients with bipolar disorder and borderline personality disorder on some index of psychosocial morbidity. As part of the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project, our group found that compared with depressed patients without borderline personality disorder, depressed patients with borderline personality disorder and patients with bipolar depression were both significantly more likely to have been persistently unemployed during the 5 years before the evaluation.¹⁸ No difference was found between patients with bipolar depression and depression with borderline personality disorder. In a second report from the MIDAS project, again focused on patients who were in a major depressive episode at the time of the evaluation, patients with type 2 bipolar disorder

were less likely to have made a suicide attempt, were rated more highly on the Global Assessment of Functioning (GAF) and had better social functioning than depressed patients with borderline personality disorder.¹⁹ Thus, both studies found that psychosocial morbidity in depressed patients with borderline personality disorder was as great as or greater than that found in patients with bipolar depression.

These studies, however, were limited to a fraction of the patients diagnosed with these disorders, and to a limited number of variables. In this report from the MIDAS project we studied all patients with a diagnosis of bipolar disorder or borderline personality disorder (not just those in a depressive episode) on multiple indicators of psychosocial morbidity, including suicidality, prior hospital admission, global and social functioning, educational attainment, diagnostic comorbidity and unemployment due to psychopathology. We predicted that the level of psychosocial morbidity would be as great in patients with borderline personality disorder as it was in patients with bipolar disorder.

Method

The Rhode Island MIDAS project represents an integration of research methodology into a community-based out-patient practice affiliated with an academic medical centre. A comprehensive diagnostic evaluation is conducted upon presentation for treatment. This private practice group predominantly treats individuals with medical insurance (including Medicare but not Medicaid) on a fee-for-service basis, and is distinct from the hospital's out-patient

residency training clinic which predominantly serves lower-income, uninsured and medical assistance patients. Data on referral source were recorded for the last 2000 patients enrolled in the study. Patients were most frequently referred by primary care physicians (29.7%), psychotherapists (17.4%) and family members or friends (17.7%). The Rhode Island Hospital institutional review committee approved the research protocol, and all patients provided informed written consent.

The sample examined in this study was derived from the 3800 psychiatric out-patients evaluated with semi-structured diagnostic interviews. Patients were interviewed by a diagnostic rater who administered a modified version of the Structured Clinical Interview for DSM-IV (SCID) and the borderline personality disorder section of the Structured Interview for DSM-IV Personality (SIDP-IV).^{20,21} We excluded the 83 patients diagnosed with both borderline personality disorder and bipolar disorder. Borderline personality disorder was not assessed at the beginning of the MIDAS project, resulting in the exclusion of 12 patients who were diagnosed with bipolar disorder because they might have also had borderline personality disorder. This left a final sample of 307 patients with borderline personality disorder and 236 patients with bipolar disorder (type 1, $n=92$; type 2, $n=113$; not otherwise specified, $n=31$). The 543 patients comprised 192 (35.4%) men and 351 (64.6%) women, aged 18–75 years (mean 34.8 years, s.d.=12.1). Approximately a third of the participants were married (30.4%, $n=165$); the remainder were single (41.9%, $n=228$), divorced (14.5%, $n=79$), separated (5.2%, $n=28$), widowed (0.4%, $n=2$) or living with someone as in a marital relationship (7.6%, $n=41$). Approximately two-thirds of the patients attended school beyond high school (69.6%, $n=378$), although only a quarter had graduated from a four-year college (24.5%, $n=133$). The sample was 87.3% ($n=474$) White, 5.5% ($n=30$) Black, 2.8% ($n=15$) Hispanic, 1.1% ($n=6$) Asian and 3.3% ($n=18$) from another or mixed ethnic background.

The interview included some items from the Schedule for Affective Disorders and Schizophrenia (SADS),²² one of which assessed the amount of time missed from work for psychiatric reasons during the past 5 years. This item is rated as follows: 0, did not work at all because was not expected to work (retired, student, homemaker, physically ill or some other reason unrelated to psychopathology); 1, virtually no time at all out of work or absenteeism unrelated to psychopathology; 2, only a few days to 1 month; 3, up to 6 months; 4, up to 1 year; 5, up to 2 years; 6, up to 3 years; 7, up to 4 years; 8, up to almost 5 years; 9, worked none, or practically none, of the time because of reasons related to psychopathology. Approximately midway through the project we began to enquire whether patients had received disability payments owing to psychiatric illness during the 5 years prior to the evaluation. This information was collected for 294 of the 543 patients included in our analysis (borderline personality disorder $n=160$, bipolar disorder $n=134$). The questions about time missed from work and disability were included at the beginning of the interview, preceding the enquiry about the presence of specific disorders. From the SADS we also included items assessing current suicidal ideation (rated 0 to 6) and current social functioning (rated 0 to 7). The SCID/SADS interview included questions assessing a history of suicide attempts and admission to psychiatric hospital. Because of the presence of a few extreme outliers (data for people who had made numerous attempts), participants' prior suicide attempts were grouped into categories representing no attempt, one attempt and multiple attempts.

The diagnostic raters were highly trained and monitored throughout the project to minimise rater drift. They included PhD-level psychologists and research assistants with college

degrees in the social or biological sciences. Research assistants received 3–4 months of training during which they observed at least 20 interviews, and they were observed and supervised in their administration of more than 20 evaluations. Psychologists observed only 5 interviews and were observed and supervised in their administration of 15–20 evaluations. During the course of training the senior author (M.Z.) met each rater to review the interpretation of every item on the SCID. Also during training every interview was reviewed on an item-by-item basis by the senior rater who observed the evaluation, and by M.Z. who reviewed the case with the interviewer. At the end of the training period the raters were required to demonstrate exact, or near exact, agreement with a senior diagnostician on five consecutive evaluations. Throughout the MIDAS project ongoing supervision of the raters consisted of weekly diagnostic case conferences involving all members of the team. In addition, every case was reviewed by M.Z. Reliability was examined in 65 patients. A joint interview design was used in which one rater observed another conducting the interview, and both raters independently made their ratings. The reliabilities for diagnosing bipolar disorder ($k=0.75$) and borderline personality disorder ($k=1.0$) were good.

Statistical analysis

The groups were compared by means of *t*-tests on continuously distributed variables. For variables with ordinal response scales and skewed responses, ordinal regression (proportional odds model) was used. Categorical variables were compared by the chi-squared statistic. We controlled for demographic variables that distinguished the diagnostic groups by means of multiple logistic, ordinal or ordinal least squares regression analysis.

Results

The data in Table 1 show that the group of patients with borderline personality disorder comprised significantly more women than the group with bipolar disorder. Patients with borderline personality disorder were significantly younger, had lower educational attainment and were less likely to be married than those with bipolar disorder. After controlling for age and gender, the patients with borderline personality disorder were significantly less likely to have graduated from college (OR=0.37, Wald $\chi^2=21.1$, $P<0.001$) and less likely to be married (OR=0.65, Wald $\chi^2=4.3$, $P<0.05$).

Compared with patients with bipolar disorder the patients with borderline personality disorder were diagnosed with significantly more Axis I disorders (Table 2). The patients with borderline personality disorder were significantly more often diagnosed with three or more Axis I disorders (when the index diagnosis of bipolar disorder was not counted for the patients with bipolar disorder). If bipolar disorder was included in the Axis I disorder count for the patients with bipolar disorder, then the patients with borderline personality disorder were still more often diagnosed with three or more disorders (79.5% *v.* 53.8%, $\chi^2=65.0$, $P<0.001$). The patients with borderline personality disorder were significantly more likely to have a history of a DSM-IV alcohol use disorder and drug use disorder. Ratings on the GAF were significantly lower in patients with borderline personality disorder, more than two-thirds of whom were rated 50 or lower on the GAF, compared with less than half of the patients with bipolar disorder. The patients with borderline personality disorder reported higher levels of suicidal ideation at the time of the evaluation and had attempted suicide more frequently (Table 2). The patients with borderline personality disorder also more frequently made multiple suicide attempts

Table 1 Demographic characteristics of the sample

	Bipolar disorder group (<i>n</i> = 236)	Borderline personality disorder group (<i>n</i> = 307)	Two-group test	<i>P</i>
Gender, <i>n</i> (%)				
Male	108 (45.8)	84 (27.4)	$\chi^2 = 19.8$	<0.001
Female	128 (54.2)	223 (72.6)		
Education, <i>n</i> (%)				
Less than high school	14 (6.0)	28 (9.1)	$\chi^2 = 28.4$	<0.001
Graduated from high school	137 (58.1)	230 (74.9)		
Graduated from college	84 (35.6)	49 (16.0)		
Marital status, <i>n</i> (%)				
Married	94 (40.0)	71 (23.1)	$\chi^2 = 22.0$	<0.001
Living with someone	12 (5.1)	29 (9.4)		
Widowed	0 (0.0)	2 (0.7)		
Separated	14 (5.9)	14 (4.6)		
Divorced	36 (15.3)	42 (13.7)		
Never married	79 (33.6)	149 (48.5)		
Age, years: mean (s.d.)	38.2 (13.4)	32.2 (10.4)		

Table 2 Psychosocial morbidity in the bipolar disorder and borderline personality disorder patient groups

	Bipolar disorder group (<i>n</i> = 236)	Borderline personality disorder group (<i>n</i> = 307)	Test	<i>P</i>
Morbidity indicator, % (<i>n</i>)				
Three or more Axis I disorders	33.9 (80)	79.4 (244)	$\chi^2 = 113.4$	<0.001
Alcohol use disorder	47.5 (112)	62.5 (192)	$\chi^2 = 12.3$	<0.001
Drug use disorder	44.5 (105)	56.7 (174)	$\chi^2 = 5.4$	<0.05
GAF score ≤ 50	47.0 (111)	67.8 (208)	$\chi^2 = 23.3$	<0.001
History of suicide attempt	26.3 (62)	47.2 (145)	$\chi^2 = 24.9$	<0.001
History of psychiatric hospital admission	50.8 (120)	42.7 (131)	$\chi^2 = 3.45$	NS
Morbidity indicator, mean (s.d.)				
No. of current Axis I disorders	2.5 (1.8)	4.1 (2.0)	<i>t</i> = 9.7	<0.001
GAF score	51.9 (8.6)	46.6 (8.9)	<i>t</i> = 7.0	<0.001
Suicidal ideation	0.8 (1.1)	1.6 (1.5)	<i>t</i> = 7.2	<0.001
Current social functioning (past 5 years) ^a	2.9 (1.2)	3.4 (1.2)	<i>t</i> = 4.5	<0.001
Time unemployed in past 5 years ^{a,b}	3.4 (2.6)	3.2 (2.3)	<i>t</i> = -1.1	NS

GAF, Global Assessment of Functioning; NS, not significant.
a. Ratings from Schedule for Affective Disorders and Schizophrenia.
b. Patients who were not expected to work (e.g. student, retired) were excluded, leaving a final sample of 217 with bipolar disorder and 285 with borderline personality disorder.

(24.1% *v.* 15.3%, $\chi^2 = 6.5$, $P < 0.01$). However, the patients with borderline personality disorder were not more likely to have been admitted to hospital for a psychiatric reason. There was no difference between the groups in the amount of time missed from work during the past 5 years (Table 2) and the likelihood of chronic unemployment throughout the 5 years before intake was not significantly different (8.1% for the borderline personality disorder group *v.* 11.5% for the bipolar group; $\chi^2 = 1.7$, $P = 0.24$). Patients with bipolar disorder were more likely to report receiving permanent disability benefits for psychiatric reasons in the past 5 years (20.9% *v.* 10.1%, $\chi^2 = 5.7$, $P < 0.05$), whereas the patients with borderline personality disorder were more likely to report temporary disability payments during this period (19.0% *v.* 9.6%, $\chi^2 = 4.4$, $P < 0.05$). The patients with borderline personality disorder reported significantly more impaired social functioning (Table 2).

After controlling for age and gender, individuals with borderline personality disorder still had lower GAF scores ($\beta = -5.3$, $t = 6.7$, $P < 0.001$), lower social functioning ($\beta = 0.64$, $t = 5.9$, $P < 0.001$) and a greater number of Axis I disorders ($\beta = 1.5$, $t = 9.0$, $P < 0.001$) than those with bipolar disorder. Those with borderline personality disorder were still more likely to have a lifetime history of a DSM-IV alcohol use disorder (OR = 2.32, Wald $\chi^2 = 19.4$, $P < 0.001$) and drug use disorder (OR = 1.49, Wald

$\chi^2 = 4.7$, $P = 0.03$). There was still no significant difference between groups in the likelihood of previous psychiatric hospital admission (OR = 0.78, $P = 0.17$), chronic unemployment (OR = 0.87, $P = 0.66$) or the amount of total work missed in the past 5 years ($\beta = -0.06$, $t = 0.28$, $P = 0.78$). Individuals with bipolar disorder were marginally more likely to receive permanent disability benefits in the 5 years prior to assessment (OR = 0.50, $P = 0.07$), whereas those with borderline personality disorder were still significantly more likely to receive temporary disability payments (OR = 2.4, $P = 0.03$). Those with bipolar disorder were also still likely to show higher cumulative levels of suicidal ideation (OR = 3.23, $P < 0.001$) and greater cumulative numbers of suicide attempts (OR = 2.49, $P = 0.002$). Thus, demographic differences between groups did not account for findings regarding differences in psychosocial morbidity between the borderline personality disorder and bipolar disorder groups.

Discussion

This is the largest comparison of people presenting for treatment who have been diagnosed with borderline personality disorder or bipolar disorder. We found that the level of impairment associated with borderline personality disorder was as great as or greater than that experienced by patients with bipolar disorder. The patients

with borderline personality disorder were less frequently college graduates, were diagnosed with more comorbid disorders, more frequently had a history of substance use disorder, reported more suicidal ideation at the time of the evaluation, more frequently had attempted suicide, reported poorer social functioning and were rated lower on the GAF. The groups did not differ in the frequency of chronic unemployment or the amount of time not working due to psychiatric reasons; however, the patients with bipolar disorder more often received permanent disability and those with borderline personality disorder more often received temporary disability payments. Perhaps patients with borderline personality disorder more often had job-related interpersonal conflicts, or brief periods of feeling overwhelmed due to other sources of conflict and stress in their lives, resulting in short leaves of absence from work and thus the higher temporary disability rates. Despite similar levels of persistent and chronic occupational impairment, individuals with bipolar disorder may be more successful in petitioning for permanent disability benefits than patients with borderline personality disorder. Consistent with the hypothesis that a bipolar disorder diagnosis facilitates receiving disability benefits, elsewhere we reported that the overdiagnosis of bipolar disorder, which itself is associated with borderline personality disorder,²³ was associated with receiving disability payments.²⁴

Despite the clinical and public health significance of both of these disorders, it sometimes seems as if borderline personality disorder lives in bipolar disorder's shadow. The literature 'promoting' the importance of bipolar disorder is much more robust than it is for borderline personality disorder. Reviews, commentaries and studies have been published indicating that bipolar disorder is underrecognised and underdiagnosed,^{25–32} whereas no such literature exists for borderline personality disorder. A PubMed search failed to identify a single published article with borderline personality and underdiagnosis (or under-recognition) in the title of the article. Consistent with efforts to improve recognition of bipolar disorder, a number of scales have been developed to screen for bipolar disorder,^{33–36} and a large body of research has accumulated examining the performance of these measures.³⁷ In contrast, only a single scale has been developed to screen for borderline personality disorder,³⁸ and few studies have examined its performance. Bipolar disorder but not borderline personality disorder was included in the Global Burden of Disease study.³⁹

Although borderline personality disorder has certainly not been ignored in the literature, compared with bipolar disorder fewer articles are published in top-tier psychiatry journals. For example, a PubMed search on 17 June 2014 of the titles of articles published since 2000 in the *British Journal of Psychiatry* yielded more than three times as many papers on bipolar disorder as on borderline personality disorder (86 v. 26). A search of the National Institute of Health Research Portfolio Online Reporting Tools found that the level of funding for bipolar disorder was more than 10 times that for borderline personality disorder.⁴⁰ The under-recognition of bipolar disorder in patients presenting for the treatment of depression has been identified as a significant clinical problem – and it is. People with a diagnosis of bipolar disorder often experience a lag of more than 10 years between initial treatment-seeking and receiving the correct diagnosis.³² The treatment and clinical implications of the failure to recognise bipolar disorder in depressed patients include the underprescription of mood stabilising medications, an increased risk of rapid cycling and increased costs of care.^{41–43} Consequently, during the past decade there has been a concerted effort to improve the recognition of bipolar disorder in depressed patients as evidenced by the aforementioned articles in the peer-reviewed literature devoted to this topic.^{27,31,44–47} One can reasonably ask whether this

emphasis on improving the recognition of bipolar disorder, much of which has been funded by the pharmaceutical industry, has come at the expense of efforts to enhance the accurate diagnosis and recognition of the public health significance of borderline personality disorder. Moreover, a potential consequence of the campaign to improve the recognition of bipolar disorder has been its overdiagnosis (and overtreatment) in patients with borderline personality disorder. The overdiagnosis of bipolar disorder to the neglect of borderline personality disorder might become an even greater problem in the future if efforts to expand bipolar disorder's diagnostic boundary take hold.^{48–50} The extreme of these efforts is to subsume borderline personality disorder under the bipolar spectrum rubric.^{10,51}

Study strengths and limitations

There were several limitations to this study. It was conducted in a single out-patient practice in which the majority of patients were White, female and had health insurance. Although the generalisability of any single-site study is limited, a strength of the study was that the patients were unselected with regard to meeting any inclusion or exclusion criteria. The MIDAS project includes patients with a variety of diagnoses and does not select cases that are prototypic, and thus more severe variants, of the diagnostic construct. Moreover, a strength of the study was the use of highly trained interviewers who diagnosed borderline personality disorder and mood disorders with great reliability. Nonetheless, replication of the results in samples with different demographic characteristics is warranted. Also, it will be important to replicate the findings in general population epidemiological samples which would have greater implications for public health policy.

The assessments of the duration of unemployment and the number of prior suicide attempts and hospital admissions were based on patients' retrospective reports rather than prospective observation or reviewing patients' employment and medical records. It is possible that patients overestimated the amount of time that they were unemployed, the amount of time unemployment was attributable to psychiatric illness or the number of prior hospital admissions or suicide attempts. Although research comparing self-reported absenteeism with employment records has found a high degree of correlation between the assessments,⁵² no study has examined the accuracy of self-reports over a 5-year period. A prospective study of occupational morbidity and healthcare use is warranted. Moreover, we examined only absenteeism from work, and did not evaluate impaired occupational performance (i.e. 'presenteeism') while maintaining employment.

Finally, some might argue against combining the patients with different bipolar disorder subtypes into a single group and comparing them with the patients with borderline personality disorder. The subtyping of bipolar disorder is largely based on the severity of functional impairment; therefore, it seemed inappropriate to compare each of the bipolar subtypes with borderline personality disorder and then attempt to draw general conclusions about the psychosocial morbidity associated with each disorder. Moreover, studies such as the Global Burden of Disease study describe the morbidity associated with bipolar disorder as a whole rather than as individual subtypes.

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