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Psychosocial Factors And Comorbidity Associated With Recovery In Bipolar Disorder

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Abstract

Bipolar disorder (BD) is a chronic psychiatric illness impacting patient functioning and quality of life. Medication produces improvement in many patients and remission in some, but there is minimal understanding about why some patients improve and others do not. Our goal was to identify demographic, psychosocial and comorbid variables associated with outcomes in BD. Charts of 121 outpatients treated with medication and supportive psychotherapy were reviewed. Forty four percent attained euthymia for 12 months while 56% did not. Poorer outcome was associated with economic stress, missed appointments, life stress, and presence of pain ($p < 0.05$). Those employed were more likely to improve ($p < 0.02$). Patients with BP-II reported more frequent life stressors, headache and use of alcohol ($p < 0.05$) and were less likely to achieve euthymia than BP-I. Gender, education, and co-morbid medical illness did not affect results. Our findings suggest that poorer outcome is related to psychosocial factors. Increased attention to these variables may increase providers' ability to manage challenging patients with BD.

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Introduction

Bipolar disorder (BD) is a chronic, severe mental illness, with a lifetime prevalence between 1.4 and 6%; patients experience profound effects on daily functioning and quality of life (1, 2). Although pharmacologic treatment guidelines are available and many patients respond well to pharmacotherapy, recommendations are inconsistent (3, 4). Our previous study reported that a combination of an atypical antipsychotic, a mood stabilizer and an antidepressant was associated with 12 months of recovery in a sample of BD patients. Forty three percent of the sample achieved recovery while the remainder did not (5).

Patients with Type II BD hav a higher lifetime prevalence of anxiety disorders compared to BD I (6). A more chronic course of illness was also found in Type II suggesting that the disability associated with BP-II is greater than previously acknowledged (7). Similarly, it was noted by some authors that patients with BD II spent a higher proportion of time with depressive symptoms which lowered functionality, but others saw no differences between patients with either type in the length of time spent with depressive symptoms (8, 9). Since between 30 to 60% of patients do not attain full functioning following treatment, exploration of additional factors correlated with persistent impairment in BD is warranted (10). Research investigating psychosocial factors and comorbidity, such as the number of previous episodes, psychotic symptoms, and outcome have been variable in determining effects on outcome (11, 6, 12, 13, 14). Social support has been identified as a variable associated with positive outcome, particularly with regard to depressive symptoms (18). Some additional variables found to be predictive in earlier studies include history of childhood abuse, stress, age at onset and comorbid anxiety and substance use disorders (15,16,17 19, 20, 21).

The goal for this study was to assess the association of recovery outcomes with demographic, psychosocial and comorbidity variables. No direction is predicted for number of previous episodes, or psychotic symptoms since earlier studies have yielded conflicting results (11, 6). We predicted a positive association between adverse childhood events (ACE), stress, age at onset with outcome, similarly to previous studies (19, 20, 21). Our study also had an exploratory goal; since the chart contained information on economic status, insurance payer type, and presence of pain, we investigated the relationship between these variables and outcome which represented a unique strategy on outcome studies in BD.

Methods

This project was a retrospective chart review approved by the Institutional Review Board under the expedited review guidelines. All individuals who had access to the data base had completed required training in the Protection of Human Subjects.

Patient Sample

Billing records for 18 months for all adult outpatients at The University of Toledo, Department of Psychiatry, were accessed to determine diagnoses of bipolar disorder as defined by DSM-IV TR criteria (22). After independent review by a board certified psychiatrist, 121 patients (84 women and 37 men) had enough information in their charts to meet DSM-IV TR criteria for Bipolar Disorder Type I, Type II or Bipolar Disorder NOS. Inclusion critiera were adults 18 years of age or older and diagnosis of one of the bipolar subtypes based on billing records, then confirmed diagnosis by an expert psychiatrist. The average age of the study sample was 42.1 years (12.2). Average age at diagnosis was 24.8 years; age at entry to the practice was 42.8 yrs. The breakdown of cultural background was 115 European American, 4 African American, 1 Hispanic American and 1 unspecified. Thirty one patients were married and 90 were single, divorced or widowed.

Procedures

Charts from patients who were in the practice for a minimum of 18 months were reviewed. The data was gathered by physicians, none of whom had treated any of these patients. A detailed data extraction form was used and completed for the initial evaluation and for each subsequent session. Information obtained from the chart included demographics (age, gender, education, marital status) prescribed medication, number of sessions attended, missed appointments, presence of body pain, psychosocial stressors, history of abuse, alcohol use, economic status, payer (government or private insurance) and outcome. Patients had to be compliant with medicine 75% of the time in order to be said to be treated with that medication. The medication list was reconciled and updated at each visit; the medication information from the chart was coded on to the standardized data sheet which was used to collect all the data. Alcohol overuse was a diagnosed condition. Life stress was coded as positive when mention by the

patient of a stressful situation was documented in the chart and entered onto the standardized data sheet. Abuse or maltreatment was established during the initial evaluation by asking about physical, sexual, emotional abuse or neglect. Although the chart contained other information, our focus was on variables that were consistently documented.

Treatment

All patients had a diagnostic evaluation and mental status exam. In our academic medical center, standard care comprises education, medication management and supportive psychotherapy. Attending psychiatrists and residents supervised by the same physicians were involved in the care of these patients. Treatment decisions were based on the clinician's understanding of and ability to implement expert opinion (23, 24, 25). Medications included mood stabilizers, atypical antipsychotics, and antidepressants for most patients. Mood stabilizers refer to lithium and anticonvulsants. A small percentage of patients also received benzodiazepines, stimulants or thyroid medications. Detailed analysis of outcome based on medication regimen has been reported previously (5).

Criteria for Determination of Outcomes:

Patients were divided into two outcome groups based on the following criteria. Group 1 (succeeders) comprised patients who sustained euthymia for 12 consecutive months and no longer met DSM-IV TR criteria for mild depression or hypomania. Patients in this group were judged to have a Clinical Global Impression Improvement Ratings (CGI-I) of 1 or 2 which indicates significant improvement this data was recorded in the chart at every visit (26). If patients relapsed after 12 months, they were still included in group 1. Group 2 were the patients who failed to achieve 12 consecutive months of euthymia (failures).

Statistical analysis:

All data analyses were conducted using SPSS software. Descriptive statistics were conducted on the entire sample and on the sample divided by gender and outcome group. Analysis of variance (ANOVA) was used to compare the outcome groups on the continuous variables. Chi square analysis was applied to the dichotomous variables. Significance level was set at $p < .05$ for all analyses. Psychosocial factors in Group 1 patients (responders/succeeders) and Group 2 (non responders/ failures) were analyzed first, followed by

Table-1. Demographic, Psychosocial Variables and Comorbidity in Group I (Succeeders) and Group 2 (Failures) Values are numbers of patients and percentages

Factor	Group 1 (n=53) 44%	Group 2 (n=68) 56%	P value
***Percent of Patients Employed during Treatment**	47.2% n=25	27.9% n=19	.029
***Percent of Patients Reporting Economic Stressors**	26.4% n=14	50% n=34	.009
***Percentage of Patients Covered by Private Insurance**	79% n=42	65% n=44	.029
+Percent of Missed Appointments Based on Total Visits	6.6% n=4	24.9% n=17	.001
***Percent of Patients Reporting Psychosocial Stressors**	17.0% n=9	33.8% n=23	.037
***Percent of Patients Reporting Pain**	43.4% n=23	60.3% n=41	.048
***Percent of Patients Reporting Any Abuse**	47% n=25	63% n=43	.057

*Chi square, Fisher's Exact t-test

+Analysis of Variance f (1,118) = 11.68 p<.001

analysis of the bipolar disorder subtypes using the same variables.

Results

Of the total sample, 53 patients or 43.8% met criteria for euthymia for 12 months (Group 1 - succeeders) while 68 or 56.1% did not (Group 2 - failures). A comparison between outcome groups, based on the criteria defined in the methods section revealed several significant differences between groups. (Table 1) Group 1 patients were more likely to be employed at some point in treatment than those who did not respond to treatment ($p < 0.02$). Group I patients were less likely to miss appointments than patients in Group 2 ($p < 0.001$). There were no significant group differences in gender, marital status or completed years of education. Compliance to medication was not significantly different between the groups (NS).

Psychosocial stressors, including economic conditions, stressful life events, presence of pain, and history of abuse were compared between the responder and the non responder groups. The presence of economic stressors was reported more frequently in failures ($p < 0.007$), as was psychosocial stressors ($p < 0.003$). Failures reported more pain than succeeders ($p < 0.05$) and more frequently had pain diagnosis on Axis III. The most commonly reported pain conditions were chest pain and headache. Patients with chronic pain were more likely to miss appointments ($p < 0.001$). History of ACEs (emotional, physical or sexual abuse) was reported more frequently in succeeders (63%) than in failures (47%). ($p < 0.057$).

Table-2. Comparison by Payer: Government or Private Insurance

	Government (n=34) 29%	Private (n=84) 71%	P value
Number of Patients Reporting or Not Reporting Economic Problems			
Yes	n =20 59%	n =28 33%	.015
No	n =14 41%	n =56 67%	
Number of Patients Reporting or Not Reporting Significant Stressors			
Yes	n =14 14%	n=17 20%	.039
No	n =20 59%	n =66 80%	

Chi Square: Fishers' Exact t-test

Table-3. Demographics of the Bipolar Subgroups

	Bipolar I (n=55)	Bipolar II (n=33)	Bipolar NOS (n=33)
Age (mean) years	45.2	39.9	39.1
Gender			
Male	n =18 33%	n =7 21%	n =12 36%
Female	n =37 67%	n =26 79%	n= 21 64%
Cultural Background			
White	n=51 93%	n =32 97%	n =32 97%
Black	n=3 5%	n =1 3%	0
Hispanic	n=1 2%	0	0
Mixed	0	0	n =1 3%
Years of Education			
< High School	n =5 9%	n =1 3%	n=2 7%
Some College	n =13 24%	n=7 22%	n =8 27%
College Graduate	n =36 67%	n=24 75%	n =20 66%
Marital Status			
Married/Partner	n =37 67%	n =24 73%	n =27 82%
Single	n =18 33%	n =9 7%	n =6 8%

Table-4. Comparison of Bipolar I and Bipolar II on Psychosocial Variables and Comorbidity Values are means

Factor	Bipolar I (n=55)	Bipolar II (n=33)	Bipolar NOS (n=33)	P value
+Proportion of Visits in which Patient Initiated Discussion of Psychosocial Stressors as % of Total Visits	19.5 %	28.6 %	21.0%	.045
***Headache (percent of patients)**	7.4% n=4	36.3% n=12	17.9% n=6	.002
***Overuse of Alcohol (percent of patients)**	22.2 % n=12	33.3 % n=11	42.4% n=14	.045
***History of Emotional Abuse (percent of patients)**	46.3% n=25	24.2% n=8	45.5% n=15	.095

+ Analysis of Variance *f* (2,116) = 3.17 p<.046

*Chi Square – Fisher's Exact t- test

Forty four percent of the patient group had a chronic medical illness other than chronic pain, such as diabetes or hypertension, but medical condition did not affect outcome. Twenty nine percent of the sample was covered by government insurance while 71% had private insurance. There were fewer patients who had government insurance who were succeeders (10/34) compared to those with private insurance (40/84) ($p < 0.027$). Analysis of psychosocial factors according to payer type was then conducted (Table 2). A higher percent of patients with government insurance reported economic problems (20/34) compared to patients with private insurance (28/84). This difference was significant ($p< 0.015$). Similarly, patients with government insurance were more likely to report significant stressors (14/34) than patients with private insurance (18/84), which was also significant ($p < 0.05$).

Subsequent analyses were conducted on the bipolar subgroups. There were 55 patients diagnosed with BP I; 33 as BP II, and 33 as BP NOS. The demographics are shown in Table 3. Based on the same outcome criteria outlined in the methods section, 40% of patients with BP I, 22 % of BP II and 39% of BP NOS were succeeders and placed into Group 1, while the remaining patients did not meet criteria for sustained euthymia. The difference between the 3 groups was not significant. When the NOS category was removed, the difference in outcomes between BP I and BP II approached significance ($p < 0.073$). The patients with BP I were older when they entered the practice ($p = .044$). There was no significant difference in the number of weeks of treatment necessary for remission among the bipolar subgroups (NS).

Psychosocial stressors were compared among the bipolar subtypes. (Table 4). BP I reported fewer stressors than BP II ($p < 0.046$). Patients with BP II were more likely to report a diagnosis of chronic headache ($p < 0 .002$). Seven percent of patients with BP I reported headaches, in comparison to 36% of BP II and 17% of BP NOS patients. Reported overuse of alcohol was higher in BP II than in BP I ($p < 0.045$) and the prevalence of comorbid chemical dependency was also higher in BP II ($p <.005$). Twenty-four % of patients presenting with BP-II reported history of emotional abuse compared with 46% of BP I patients and 45% of patients with BP NOS ($p < 0.095$). Further analysis was conducted on each subgroup of BD separated into succeeders and failures. In BP I, there was a significant difference in number of patients reporting a headache diagnosis (failures higher) (chi square = 4.7; $p < 0.047$). In BP II, reported stressors were significantly higher in failures than in succeeders ($F = 9.4$; $p < 0.004$). Alcohol overuse was significantly higher in BP NOS failures than succeeders (chi-square = 4.4; $p < 0.04$).

Discussion

BD is a chronic and debilitating condition that creates distress and impairs function. Medication management is associated with positive response, but outcomes vary. More than half of the patients in our sample did not maintain euthymia for at least 12 months. Psychosocial and comorbid variables were found to be significantly related to treatment outcome. Life stressors, especially economic conditions, assessed by self report and type of payer were associated with

poor outcome, suggesting that these factors may be inter-correlated. The presence of pain was associated with less positive response to treatment; however, patients with pain were more likely to miss appointments, suggesting that adherence may be an intermediary variable between pain and outcome. Similarly, patients who missed appointments may not have been completely adherent to medication, but we cannot determine that this was the reason for cancelling an appointment, as treatment failures also had more life stressors, more economic problems and more pain which could have interfered with their ability to attend sessions.

A poorer outcome was found more often in patients with a history of adverse childhood events (ACE) whether they be physical, emotional or sexual abuse, which is consistent with the existing literature (27, 28). Recurrent and persistent depression has been reported by others (29) in those abused as children, which may be related to the less robust response of patients with BP II. The findings of Poletti et al (30) suggest that cognitive distortions may be a mediator that contributes to the depressive symptoms in BD when abuse has occurred. Overall, patients with BP I reported fewer stressors, less pain, less frequent use of alcohol; they were more often in Group 1 (succeeders) than in Group 2 (failures). When the bipolar subgroups were divided into succeeders and failures, possible mediating factors for outcome were identified. BP I failures were more likely to have headaches; BP II failures reported significant stressors more frequently and BP NOS failures had a higher frequency of alcohol overuse.

Limitations in our study need to be considered. As a chart review study, only variables recorded in the chart could be evaluated; there was incomplete data for some of the variables. Although we found significant associations between some psychosocial variables and outcome, our research design does not allow conclusions about causation, only associations. With multiple variables under analysis and BP subgroups being studied, there is a risk for a Type I error. This study was conducted in an academic medical center so the results may not be generalized to mental health clinics or other areas of the country. All patients in our center receive supportive psychotherapy within the context of medication management, a feature that is not typical of many outpatient treatment centers.

Conclusion

Our findings highlight the relevance of psychosocial variables and comorbidities in treatment outcome. Asking patients about stressors in their life may uncover impediments to their successful participation in treatment. Specific targeted interventions, such as stress management, mindfulness and cognitive behavioral therapy could assist patients who identify psychosocial stressors, while patients suffering from chronic pain may need referral to specialized pain clinics where care can be coordinated with the psychiatric services. For those patients with significant psychosocial challenges, referral for psychotherapy, in conjunction with medication management, should be routine. By addressing associated psychosocial variables and comorbidity in the treatment plan, patients' recovery might be enhanced.

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References

1. Michalak, E.E., Yatham, L.N., Kolesar, S., and Lam, R.W. (2006) *Qual. Life. Res. 15(1)*, 25-37
2. Merikangas, K.R., Akiskal, H.S., Angst, J., Greenberg, P.E., Hirschfeld, R.M., et al. (2007) *Arch. Gen. Psychiat. 64(5)*, 543-552
3. Sachs, G.S., Thase, M.E., Otto, M.W., Bauer, M., Miklowitz, D., et al. (2003) *Biol. Psychiat. 53(11)*, 1028-1042
4. Busby, K.K. and Sajatovic, M. (2010) *CNS Neurosci. Ther. 16(5)*, 308-315
5. Rapport, D., Kaplish, D., McGrady, A., McGinnis, R., Whearty, K., et al. (2015). *J. Psychiatr. Prac. 21(5)*, 351-358
6. Judd, L.L., Akiskal, H.S., Schettler, P.J., Coryell, W., Endicott, J., et al. (2003a) *Arch. Gen. Psychiat. 60 (3)*, 261-269
7. Judd, L.L., Akiskal, H.S., Schettler, P.J., Coryell, W., Maser, J., et al. (2003b) *J. Affect Disorders 73(1-2)*, 19-32
8. Mantere, O., Suominen, K., Valtonen, H.M., Arvilommi, P., Leppamaki, S., et al. (2008) *Bipolar Disord. 10(3)*, 413-425
9. Joffre, R.T., MacQueen, G.M., Marriott, M., Trevor Young, L. (2004) *Bipolar Disord. 6(1)*, 62-66

10. MacQueen, G.M., Young, L.T., and Joffre, R.T. (2001) *Acta. Psychiat. Scand. 103(3)*, 163-170
11. Alloy, L.B., Abramson, L.Y., Urosevic, S., Walshaw, P.D., Nusslock, et al. (2005) *Clin. Psychol. Rev. 25 (8)*, 1043-1075
12. Altshuler, L., Tekell, J., Biswas, K., Kilbourne, A.M., Evans, D., et al. (2007) *Psychiat. Serv. 58(11)*, 1441 -1447
13. Staner, L., Tracy, A., Dramaix, M., Genevrois, C., Vanderelst, M., et al. (1997) *Psychiat. Res. 69(1)*, 39 -51
14. Keck, P.E. Jr., McElroy, S.L., Strakowski, S.M., West, S.A., Sax, K.W., et al. (1998) *Am. J. Psychiat. 155 (5)*, 646-652
15. Miklowitz, D. and Johnson, S. (2009). *Clin. Psychol. 16(2)*, 281-96
16. Ellis, A.J., Portnoff, L.C., Axelson, D.A., Kowatch, R.A., Walshaw, P., et al. (2014) *Psychiat. Res. 216 (2)*, 213-216
17. Miklowitz, D., Wisniewski, S., and Miyahara, S. (2005). *Psychiat. Res.136*, 101-111
18. Weinstock, L. and Miller, I. (2010). *Compr. Psychiat. 51*, 497-503
19. Daruy-Filho, L., Brietzke, E., Lafer, B., and Grassi-Oliveira, R. (2011) *Acta. Psychiat. Scand. 124(6)*, 427-434
20. Jaworski, F., Dubertret, C., Ades, J., and Gorwood, P. (2011) *Psychiat. Res. 185(1-2)*, 129-134
21. Baldassano, C.F. (2006) *J. Clin. Psychiat. 67(suppl 11),* 8-11
22. American Psychiatric Association (2000) *Diagnostic and Statistical Manual of Mental Disorders*, 4th Ed., text rev. Washington, DC
23. Sachs, G.S., Nierenberg, A.A., Calabrese, J.R., Marangell, L.B., Wisniewski, S.R., et al. (2007) *New Engl. J. Med*. 356(17), 1711-1722
24. Smith, L.A., Cornelius, V., Warnock, A., Bell, A., and Young, A.H. (2007) *Bipolar Disord*. 9(4), 394–412
25. Suppes, T., Swann, A.C., Dennehy, E.B., Habermacher, E.D., Mason, M., et al. (2001) *J. Clin. Psychiat. 62(6)*, 439-447
26. Busner, J. and Targum, S.D. (2007) *Am. J. Psychiat. 4(7)*, 28-37
27. Larsson, S., Aas, M., Klungsoyr, O., Agartz, I., Mork, E., et al. A, Klungsoyr O et al (2013). BMC Psychiatry 13 97
28. Maniglio, R. (2013) *Bipolar Disord. 15(4)*, 341-358
29. Nanni, V., Uher, R., and Danese, A. (2012) *Am. J. Psychiat. 169(2)*, 141-151
30. Poletti, S., Colombo, C., and Benedetti, F. (2014) *Compr. Psychiat. 55*, 1803-1808