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Social Aspects of the Workplace Among Individuals With Bipolar Disorder

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Abstract

Objective—Bipolar disorder (BD) is characterized by recurrent mood episodes and profound impairments in psychosocial functioning. Occupational disability is one of the most problematic impairments for individuals with BD due to high rates of unemployment and work impairments. Current evidence indicates that social stressors at work—such as social isolation, conflict with others, and stigmas—are common experiences for employed individuals with BD. Yet, few studies have examined the relationship between social stressors at work and overall occupational functioning, instead focusing on individual clinical features of the disorder.

Method—This cross-sectional study employed logistic and linear regressions to determine which demographic variables, mood symptoms, and social aspects of the work environment (exclusion, conflict, social support, stigma) were associated with work status (working vs. not working) and work functioning for individuals with bipolar disorder I and II.

Results—Greater stigma and exclusion at work ($p < .05$) are associated with unemployment among adult individuals with BD, and higher degrees of depression and conflict at work ($p < .05$) are associated with work impairments for employed individuals.

Conclusions—By examining two distinct measures of work outcomes (work status and work functioning) within the same group of participants, this study provides a unique insight, revealing that predictors of occupational functioning vary based on the specific measure of work outcomes used. This study also emphasizes the need for treatments that address the clinical features of BD and intervene in the work environment to improve functioning and prevent unemployment among individuals with BD.

Keywords

mood disorders; employment outcomes; work status; stigma; conflict

Bipolar disorder (BD) is a chronic disorder characterized by recurrent mood episodes and profound, ongoing impairments in psychosocial functioning (Huxley & Baldessarini, 2007; Kessler et al., 2006; Kupfer et al., 2002; Merikangas et al., 2007; Perron, Bunger, Bender, Vaughn, & Howard, 2010). Occupational functioning is among the most problematic impairments for individuals with BD due to the high rates of unemployment (65%) and vocational impairments (80%; Carlborg, Ferntoft, Thuresson, & Bodegard, 2014; Huxley & Baldessarini, 2007; Schoeyen et al., 2011). Even individuals with BD who are employed are less likely to receive employee benefits (e.g., health insurance) compared to those with physical disabilities or no disabilities (Sosulski, Donnell, & Kim, 2012). In addition, poor employment outcomes among those with BD are associated with high levels of financial disability worldwide and \$14.1 billion (salary-equivalent) in annual lost productivity within the United States (Kessler et al., 2006; Murray & Lopez, 1997). Beyond the financial loss, unemployed individuals with BD experience greater psychopathology, lower rates of self-esteem, and a poorer quality of life (Nordt, Müller, Rössler, & Lauber, 2007; Priebe, Warner, Hubschmid, & Eckle, 1998; Ruesch, Graf, Meyer, Rossler, & Hell, 2004). Although there is a clear relationship between poor employment outcomes and having BD, the direction of this relationship is not entirely clear based upon the current literature and could include several possibilities: BD symptoms could lead to employment difficulties, employment difficulties could lead to worsening BD symptoms, BD symptoms and employment difficulties could have a bidirectional relationship, and a poor job fit for an individual with BD may lead to increased employment difficulties. To better address this critical domain, it is essential to learn more about which aspects of having BD are associated with trouble at work.

Studies aimed at identifying predictors of occupational functioning among individuals with BD traditionally examine clinical, neurocognitive, and sociodemographic variables (Bauer, Kirk, Gavin, & Williford, 2001; Bonnín et al., 2010; Cerit, Filizer, Tural, & Tufan, 2012; Judd et al., 2005; Rosa et al., 2009). However, theories on the course of BD (Dienes, Hammen, Henry, Cohen, & Daley, 2006; Grandin, Alloy, & Abramson, 2006; Kennedy, 1983; Monk, 1990), and considerations related to systems theory (Bronfenbrenner, 1979; Bronfenbrenner & Ceci, 1994)—which place great emphasis on the influence of the environment—suggest that social stressors within one's work environment (e.g., conflict or stigma at work) can also be associated with work impairments. Among individuals with

mood disorders, 81% experienced bullying at work (i.e., severe conflict with or exclusion from others at work), compared to 55.7% for those with anxiety disorders and 51% for those with adjustment disorders (Nolfe, 2010). Employed individuals with BD have also reported that difficulties getting along with others, social isolation from work relationships, and exposure to stigma were common experiences within the workplace (Michalak, Yatham, Maxwell, Hale, & Lam, 2007).

Despite a higher prevalence of these social stressors at work (i.e., bullying, conflict, social isolation, stigma) present for individuals with BD, few studies have examined their direct relationship to occupational functioning (Gilbert & Marwaha, 2013; Tse et al., 2014). One qualitative study assessed work conflict and stigma at work in relation to occupational functioning and found that individuals with BD reported that both conflict and stigma negatively affect their work functioning (Michalak et al., 2007). An examination of stigma among individuals with mental illness found that expressions of stigma in the work environment produced social conditions that undermined efforts to meet work requirements and fully integrate into the work environment (Krupa, Kirsh, Cockburn, & Gewurtz, 2009). Prior research has also indicated that lower levels of social support are associated with reduced employment status and increased disability rates among individuals with BD (Nordt et al., 2007; Priebe et al., 1998; Ruesch et al., 2004). However, in a recent cross-sectional study, perceived social support was not found to be significantly associated with employment status for those with BD (Ryan et al., 2013). Lastly, no known studies have directly measured the association between exclusion from others at work and occupational functioning among participants with BD. Although the current evidence demonstrates that individuals with BD are likely to experience conflict with and exclusion from others, a lack of social support, and exposure to stigma at work, it is unclear if these aspects of the work environment interfere with one's ability to successfully function at work or maintain employment. A comprehensive examination of which social aspects of the work environment influence occupational functioning has the potential to contribute to the development of better interventions aimed at improving work conditions for those with BD and remediating poor work outcomes.

When examining predictors of occupational functioning for individuals with BD, one should also consider the influence of depression and mania given that mood symptoms, primarily depression, are most commonly associated with poor occupational functioning (Bauer et al., 2001; Bonnín et al., 2010; Cerit et al., 2012; Elinson, Houck, & Pincus, 2007; Gitlin, Mintz, Sokolski, Hammen, & Altshuler, 2011; Judd et al., 2005; Rosa et al., 2009). Current depressive symptoms have been found to account for up to half of the variance in work impairments (Social Adjustment Scale; Bauer et al., 2001). Manic symptoms have been less consistently associated with work functioning in BD, but some studies have found manic symptoms to predict unemployment in individuals with BD (Bauer et al., 2001; Elinson et al., 2007; Hammen, Gitlin, & Altshuler, 2000). However, due to the way occupational functioning is typically measured (work status: working vs. not working), it is difficult to discern specifically which aspects of work outcomes these features of BD affect the most. For example, depressive symptoms (e.g., anhedonia, low energy, lack of motivation) could be associated with the way in which someone performs at work, and manic episodes (e.g., irritability, grandiose thinking, impulsive behaviors) could more likely result in job loss.

Research examining both work status and work functioning (e.g., performance, attendance, satisfaction) would help to better clarify the relationships between clinical symptoms, social aspects of the work environment, and occupational functioning among persons with BD.

Understanding the nature of occupational functioning as it relates to mental illness is particularly relevant to the field of social work given that social workers are front-line treatment providers for individuals with BD and often find themselves addressing the employment-related needs of their clients, such as improving work performance, gaining employment, or determining qualification for disability (Rubin, 2014; Shankar, Barlow, & Khalema, 2011). In addition, social workers are one of the major professional groups working in organizations that offer employee assistance programs (Csiernik & Darnell, 2010). Therefore, developing better ways to improve occupational functioning within individuals with BD is strongly relevant to social work and would greatly improve clinical social work practice (Perron et al., 2010).

The goal of this study is to identify associations of mood and social aspects of the work environment to predict work status (working vs. not working) and work functioning among a sample of individuals with BD. Based on current research, it is hypothesized that—out of a subset of demographic, mood symptoms, and social aspects of the work environment—higher depressive symptomatology, lower levels of social support, and higher degrees of stigma will be associated with poorer work functioning and unemployment.

Method

Sample and Design

Study participants were recruited from an ongoing, naturalistic, longitudinal study of BD (the Prechter Longitudinal Study of BD) at a large university in the Midwestern United States (Langenecker, Saunders, Kade, Ransom, & McInnis, 2010); all participants had a suspected or prior diagnosis of BD. Exclusion criteria included a diagnosis of schizophrenia, schizoaffective disorder (depressed type), active substance abuse, or any medical illness associated with depressive symptoms (including but not limited to terminal cancers, stroke, and Cushing's disease). Clinicians completed the initial evaluation at enrollment, which included the Diagnostic Interview for Genetic Studies (Nurnberger et al., 1994). Two MD- or PhD-level investigators who were experts in BD reviewed the Diagnostic Interview for Genetic Studies and medical records for each participant and determined the final consensus diagnosis of bipolar disorder and substance-use disorders according to the DSM-IV diagnostic criteria (American Psychiatric Association, 2000).

Of the 1,161 adult participants in the longitudinal study (as of December 2015) who had a psychiatric diagnosis (i.e., bipolar disorder, major depression, schizophrenia, schizoaffective) or were healthy controls, only 400 had a DSM-IV diagnosis of bipolar I disorder or bipolar II disorder and were invited to participate via a mailed letter. The response rate for this mailing was 32% (129 participants), which is a standard return rate for this sample. Both studies were approved by the institutional review boards of a large university in the Midwestern United States.

Measures

Conflict at work—The Interpersonal Conflict at Work Scale (ICAWS) is a four-item self-report measure of the amount of conflict experienced with other people at work (Spector & Jex, 1998). Responses range from 1 (*never*) to 5 (*very often*); a higher score indicates frequent conflict with others. Individuals were asked to respond based on their current job, or if not currently working, the most recent paid job they held. Cronbach's alpha was calculated for this study and found to be .78, which is moderately strong.

Exclusion at work—*Exclusion* is defined as a form of bullying that involves a one-way prolonged oppression toward another at work (Stoetzer, Ahlberg, Bergman, Hallsten, & Lundberg, 2009). The two questions assessing exclusion at work were taken from the Stockholm County Public Health Questionnaire: "Do you feel excluded by your superiors?" and "Do you feel excluded by your coworkers?" (Stoetzer et al., 2009). Responses range from 1 (*Yes, to a large extent*) to 4 (*Not at all*), and a lower score indicates greater exclusion. Individuals were asked to respond based on their current job, or if not currently working, the most recent paid job they held. Cronbach's alpha was calculated for these two study questions and was found to be moderately strong at .71.

Social support—*Social support at work* is a subscale within the Job Content Questionnaire, a 21-item self-report measure, of which eight items ask specifically about social support from coworkers and supervisors (Karasek et al., 1998). Responses range from 1 (*strongly disagree*) to 4 (*strongly agree*), and a higher score indicates greater social support at work. Individuals were asked to respond based on their current job, or if not currently working, the most recent paid job they held. Cronbach's alpha was strong at .94.

Stigma at work—*Stigma at work* is defined as discrimination from others at work in response to negative stereotypes held about individuals with BD. To assess stigma in the workplace, questions were taken from the Workplace Stigma Survey, which is a 38-item self-report measure with four sections: "stigma and your work," "stigma and your work environment," "stigma and your recovery process," and "your personal background" (Rusinova, Griffin, Bloch, Wewiorski, & Rosoklija, 2011). Stigma at work was measured based on one's perceived experience with stigma, and this was assessed in two ways. *Stigma impact on keeping a job* assesses how much mental illness stigma has affected one's ability to keep a job. *Stigma impact on everyday work* assesses how the stigma of mental illness has impacted an individual's everyday work. Responses range from 1 (*no negative impact*) to 10 (*very strong negative impact*). Survey questions included, "Using a scale from 1 to 10, please evaluate the impact that stigma of mental illness has had on your ability to keep a job"; and, "Using a scale from 1 to 10, please evaluate the impact that stigma of mental illness has had on your everyday work." Individuals were asked to respond based on their current job, or if not currently working, the most recent paid job they held.

Mood symptoms—The Beck Depression Inventory (BDI) is a 21-item self-report measure used to assess the severity of depression symptoms. A total score of 0–13 is considered minimal range, 14–19 is mild, 20–28 is moderate, and 29–63 is severe (Beck, Steer, Ball, & Ranieri, 1996). Cronbach's alpha for items within the BDI for this study was

strong at .95. The Altman Self-Rating Mania Scale (ASRM) is a five-item self-report mania severity scale used to assess DSM-IV manic symptoms over the past week, where higher scores indicate more manic-like symptoms. A score of 6 or higher indicates a high probability of a manic/hypomania episode (Altman, Hedecker, Peterson, & Davis, 1997). Cronbach's alpha for items within the ASRM for this study was strong at .86.

Work functioning—The Life Functioning Questionnaire is a self-report questionnaire designed to assess work and role functioning in individuals with psychiatric disorders (Altshuler, Mintz, & Leight, 2002). In the questionnaire, the term *work* refers to paid work, school, and volunteer work (Altshuler et al., 2002). The Life Functioning Questionnaire is a gender-neutral, 5-minute, 14-item self-report scale that assesses four domains: “leisure time with friends” (three items); “leisure time with family” (three items); “duties at home” (four items); and “duties at work, school or activity center” (four items). Only the work domain—the Life Functioning Questionnaire work subscale (LFQ-W)—was used for this study. The work items measuring degree of difficulty functioning are (a) “Time: amount of time spent at work,” “Performance: quality of work,” (c) “Conflict: getting along with co-workers and supervisors,” and (d) “Enjoyment: enjoyment/satisfaction and interest from work.” (The work item measuring *time* is discussed as *attendance at work* throughout this paper.) Each item is rated on a 4-point scale: 1 (*no problems*), 2 (*mild problems*), 3 (*moderate problems*), 4 (*severe problems*). For the purposes of this study, a total score from three of the four items (time, enjoyment, performance) was used as the measure of work functioning to create functioning categories: 3 (no problems/minimal problems), 4–6 (mild problems), 7–9 (moderate problems), 10–12 (severe problems). The item *conflict* was removed from the total LFQ-W score due to conflict also being measured as a predictor within these analyses. The LFQ-W subscale was found to have very good test–retest reliability ($r = .76$), and internal consistency reliability was found to be .87, suggesting the items fit well together within this domain (Altshuler et al., 2002). With the removal of one of the items, conflict at work, Cronbach's alpha for the three remaining items was .67, suggesting that each of the three remaining items still reliably represent work functioning. Good convergent validity was found between the LFQ-W subscale and the Social Adjustment Scale Self-Report work items ($r = .61$; Altshuler et al., 2002).

The LFQ-W is only relevant to people who are working at the time they completed it, so those who were currently unemployed but had a history of work experience skipped the LFQ-W but responded to the rest of the measures based on their most recent work experience. The LFQ-W is the only questionnaire individuals were asked to skip if they were not currently working.

Work status—Participants were asked whether they were currently unemployed using an employment screening item on the LFQ-W. Those who responded “yes” were included in the working group. Those who responded “no” were included in the not-working group.

Statistical Analyses

The data were analyzed using IBM SPSS (Version 22) and Stata (Version 13.1). Descriptive statistics and frequency distributions of the independent and dependent variables were

created and are provided in tables 1 and 2. Pearson correlations and point biserial correlations were calculated between all continuous or dichotomous independent variables (demographic, mood, social aspects of work environment) and the dependent variables (work status and work functioning using LFQ-W). Post hoc Bonferroni corrections were performed for multiple comparisons. Significant relationships between the independent variables and the dependent variable were used to determine predictors in the regression models.

Logistic and linear regressions were then employed. A logistic regression was conducted to examine the relationship of variables (i.e., current depressive symptoms, current manic symptoms, conflict at work, exclusion at work, social support at work, impact of stigma on keeping a job, age, education) with work status (working vs. not working). A linear regression was conducted to examine the influence of variables (i.e., current depressive symptoms, current manic symptoms, conflict at work, exclusion at work, social support at work, impact of stigma on everyday work) with a self-report measure of work functioning (LFQ-W) among only the working individuals within this study. Multicollinearity was assessed in both regression models.

Results

Descriptive Statistics

Descriptive statistics are reported in Table 1. Mean age was 47 years ($SD = 13.31$) for the not-working group and 51 years ($SD = 12.35$) for the working group. The working and not-working groups did not differ on educational attainment ($p = .14$), and the most common level of education for these groups was a bachelor's degree for both the working ($n = 24$) and not-working groups ($n = 17$). Mean BDI score was 19.43 ($SD = 13.57$) for the not-working group, a mild level of depressive symptoms. Mean BDI score was 10.33 ($SD = 9.54$) for the working group, below the cutoff (14) for significant depressive symptoms. Mean ASRM score (hypomania/mania) was 2.90 ($SD = 3.33$) for the not-working group and 1.63 ($SD = 2.35$) for the working group, which are both below the cutoff (6) for significant hypomanic/manic symptoms. The average LFQ-W score for the working group was 4.9 ($SD = 2.0$) with a minimum score of 3 and a maximum score of 11, which indicates mild levels of impairment in work functioning.

Associations with Work Status

Correlation results, reported in online Table S1, were considered significant if $p < .05$. Of the demographic and mood variables, age ($r = .18$), education ($r = .13$), current depression (BDI; $r = -.37$), and current mania (ASRM; $r = -.22$) were found to be significantly associated with work status. Older individuals, individuals with higher levels of education, and individuals with lower depressive and manic symptoms were more likely to be working. All work environment variables were found to be significantly correlated with work status; conflict at work ($r = -.23$), exclusion at work ($r = .40$), social support at work ($r = .33$), and impact of stigma on keeping a job ($r = -.47$) indicated that individuals reporting less conflict, exclusion, and stigma at work, as well as greater social support at work, were more

likely to be working. Correlations that did not remain significant with work status for the Bonferroni corrected p value of .005 included age, education, and conflict at work.

Associations with Work Functioning

Correlation results, reported in online Table S1, were considered significant if $p < .05$. Of the demographic and mood variables, current depression (BDI; $r = .53$) and current mania (ASRM; $r = .30$) were found to be significantly associated with work functioning (LFQ-W). Higher depressive and manic symptoms were associated with greater work impairments. All work environment variables were found to be significantly correlated with work functioning: conflict at work ($r = .56$), exclusion at work ($r = -.38$), social support at work ($r = -.39$), and impact of stigma on everyday work ($r = .46$). Greater conflict, exclusion, and stigma at work are associated with greater work impairments, and lower social support is associated with greater work impairments. All correlations with work functioning remained significant for the Bonferroni corrected p value of .005.

Predictors of Work Status

A logistic regression was conducted to assess the relationship of work status with depressive symptoms (BDI), manic symptoms (ASRM), conflict at work, exclusion at work, social support at work, impact of stigma on keeping a job, age, and education (Table 2). A test of the full model was statistically significant— $\chi^2(8, N = 96) = 41.11$, Nagelkerke R^2 of .47—indicating that the set of predictors reliably and moderately distinguished between working and not-working participants with BD. The Hosmer-Lemeshow goodness-of-fit test had a significance of .63, indicating the model was a good fit. The model correctly classified 75% of all cases, including 83% of the working BD participants. Exclusion and stigma were both significant predictors (p values $< .01$). When the score for exclusion at work increased by one point (lower degree of exclusion at work), participants with BD had an odds of working that was 2.73 times higher than the score of someone with one less point on the exclusion scale. When the score for impact of stigma on keeping a job increased by one point (a higher degree of stigma), participants with BD had an odds of working that was .72 as high as someone with one less point on the stigma scale. Analysis of the correlation matrix suggested that no variables were so highly correlated as to raise concerns about multicollinearity (Neter, Kutner, & Wassman, 1989).

Predictors of Work Functioning Among the Employed

A multiple regression was conducted to predict overall working functioning (LFQ-W score) based on BDI (current depression), ASRM (current mania), conflict at work, exclusion at work, social support at work, and impact of stigma of mental illness on everyday work (Table 3). The overall model was found to be significant ($F(6, 55) = 8.12, p < .001$) with an adjusted R^2 of .41. BDI and conflict at work were significant predictors. As BDI increased by one point (greater depression), the LFQ-W score increased by .07, indicating more work impairment and suggesting a small substantive effect. As conflict at work increased by one point (greater depression), the LFQ-W score increased by .84, indicating more work impairment and suggesting a moderate effect. Analysis of the correlation matrix suggested no variables were so highly correlated to raise concerns about multicollinearity (Neter et al., 1989; Ender, 2010).

Discussion

This study employed logistic and multiple linear regressions to determine which demographic variables, mood symptoms, and social aspects of the work environment were associated with work status (working vs. not working) and work functioning for individuals with BD. Exclusion at work and the impact of stigma on keeping a job significantly predicted work status, whereas current depressive symptoms and conflict at work predicted work functioning. By including two distinct measures of work outcomes within the same group of participants, this study provides a unique insight by revealing that predictors of occupational functioning vary based on the specific aspects of work measured.

Work Status: Stigma and Exclusion at Work

This is the first known quantitative study to demonstrate an association between stigma at work and work status in BD. A prior qualitative study assessed the impact of stigma at work on occupational functioning and found that most individuals with BD reported their experience with stigma at work resulted in feelings of alienation, job demotions, missed opportunities for promotions, and even job loss (Michalak et al., 2007). Similarly, results from this study suggest that individuals with BD who experienced stigma at work were more likely to be unemployed. Based on the negative stereotypes commonly attributed to individuals with BD or mental illness in general (e.g., incompetence, weakness, laziness, dangerousness; Hawke, Parikh, & Michalak, 2013; Krupa et al., 2009), it is plausible that someone whose illness is disclosed at work is more likely to experience negative consequences, such as job loss. This finding highlights a crucial dilemma that employed individuals with BD often face. To ensure better work performance through special accommodations or to receive greater support from coworkers, individuals with BD must disclose their illness at work. However, in doing so, our findings suggest disclosure may risk job security. Stigma is a critical issue for those with severe mental illness, and our findings emphasize that the negative impact of stigma may even reach into the area of employment. Further research to provide safer and less stigmatizing work environments for individuals with BD is necessary to not only enhance quality of life but to promote better work outcomes. Our findings suggest that individuals with BD could benefit from working with mental health clinicians, such as social workers, to develop more strategic ways to disclose their illness at work, cope with exposure to stigma at work, and effectively address stigma in the workplace.

Exclusion at work, a passive form of bullying, was also associated with work status within this study; individuals with BD who experienced a greater amount of exclusion from coworkers and supervisors were less likely to be employed. Being excluded in the work environment could lead to a variety of negative consequences. Exclusion reduces the amount of social support one receives from others at work, which is an essential component in the successful management of BD (Krupa et al., 2009). In addition, exclusion may also reduce one's perceived value at work by coworkers and supervisors, putting the individual with BD in greater jeopardy for job loss (Krupa et al., 2009). Results from this study provide a unique perspective on the meaningful role work relationships may play in determining employment

outcomes for individuals with BD and underscore the importance of intervening to improve relationships with coworkers and supervisors.

Another important consideration based on the results of this study is the potential relationship between stigma and exclusion at work—the only two predictors found to be significantly associated with work status. There may be an important interplay between these two variables in that employees who are seen as different and less competent are more likely to be excluded by their coworkers and even supervisors. Therefore, stigma at work due to having a severe mental illness may result in both direct negative consequences and indirect work hardships due to exclusion from others at work. Understanding exactly how these predictors interact and how they impact work status is beyond the scope of this study. However, further research to determine the precise nature of the relationships between stigma at work, exclusion at work, and work status could inform interventions aimed at improving occupational functioning among those with BD.

Work Functioning: Depression and Conflict at Work

Consistent with prior research, depression and conflict at work were significantly associated with work functioning for employed individuals with BD (Bauer et al., 2001; Bonnín et al., 2010; Cerit et al., 2012; Elinson et al., 2007; Gitlin et al., 2011; Michalak et al., 2007; Rosa et al., 2009). The findings from this study extend beyond the current literature in two ways. First, these results support a biopsychosocial approach to understanding work outcomes in BD by demonstrating that clinical features of the disorder, as well as environmental factors, can influence how an individual with BD functions at work. Therefore, social work practitioners or other mental health providers intervening within the work environment to address problematic relationships with coworkers and/or supervisors may be as important as it is to address symptom recovery.

In addition, by measuring two distinct work outcomes within the same group of participants, this study revealed that both depression and conflict at work have a greater influence on work functioning than on employment status. Being depressed and having difficulty getting along with others at work may impair how someone performs at work but may not necessarily result in unemployment. These findings provide a more detailed examination beyond prior research of how specific features of BD influence different areas of occupational functioning. Further social work research identifying specific vocational impacts of depression and conflict at work may reveal the need for more precise intervention targets.

Mania

Manic symptoms were not associated with work status or work functioning in either of the models within this study. This confirms results from both cross-sectional and longitudinal studies, most of which have found that subthreshold and clinical hypomanic/manic symptoms do not predict employment status or functioning at work (Bauer et al., 2001; Bearden et al., 2011; Bowie et al., 2010; Goldberg & Harrow, 2011; Judd et al., 2005; Martinez-Aran et al., 2007). Individuals with BD experience depression at far greater rates

than they experience mania (Judd et al., 2003), which may explain why depressive symptoms drive work impairments to a much larger degree than does mania.

Age and Education

Contrary to our hypotheses, age and education were not found to be significant predictors of work status. Previous literature has consistently found older individuals and those with lower levels of education more likely to be unemployed (Elinson et al., 2007; Mur, Portella, Martinez-Aran, Pifarre, & Vieta, 2009; Waghorn, Chant, & Jaeger, 2007; Zimmerman et al., 2010). These inconsistent findings may be due to the inclusion of environmental factors within this study. Perhaps the social difficulties found to be associated with work status (i.e., conflict and exclusion) account for the variance typically attributed to demographics, age, and education in more traditional regression models. Further research exploring the influence of demographics commonly associated with poor occupational functioning while also assessing the work environment could help to clarify this.

Limitations

To capture the multiple domains of occupational functioning in a timely manner using our large cohort of existing participants, we opted to use a self-report measure of occupational functioning that could be mailed. This form of measurement may be confounded by responder bias due to a reliance on the accuracy of the individual's reporting, which could be influenced by factors including culture, religion, language, strength of memory, mood, and time (Schwarz & Oyserman, 2001). Another limitation is that due to the generalizability of self-report assessments, they tend to lack detail. For this self-report specifically, work functioning measure is not tailored for distinct occupations or to capture the range of occupations that require varying levels of skill. Due to the cross-sectional design of this study, our associations do not imply causality or directionality and may flow in either direction or even be bidirectional. Further longitudinal studies examining associations between these same workplace stressors with work outcomes could better determine a clearer direction of their relationships. Further, our focus was not to examine the differences between types of BD diagnosis (i.e., bipolar I disorder, bipolar II disorder, and bipolar disorder not otherwise specified), despite reported differences among the groups in terms of clinical and neurocognitive outcomes (Solé et al., 2012). So, the effect of specific BD pathologies may impact our overall outcome. Future research that segregates and compares these groups may help identify work-outcome predictors unique to each diagnostic group and thus may identify treatment targets unique to each group. This study also was unable to account for medication use as is common in most naturalistic studies, raising concern of a potential medication effect on cognition and/or employment. Despite this, the study was not sufficiently powered to detect medication effects, given that few patients were unmedicated and participants on medication were taking a wide variety of medications. Study criteria at the time of enrollment was to exclude individuals with BD who met criteria for active substance abuse or dependence (past abuse or dependence was allowed), which may not generalize to the overall BD population considering the high comorbidity of substance-use issues. Our sample included only individuals residing in a single Midwestern county, and results obtained from this group may not generalize to the broader BD population. In addition, we did not track participants who did not return the survey; therefore, we were

unable to test for responder bias to determine any differences between participants who completed the survey versus those who did not. Finally, stigma was assessed in this study using a self-report measure, which risks responder bias and may be influenced by current mood state. Assessing stigma in the actual work environment (e.g., evaluating the employer) may eliminate this issue. However, due to the importance and impact of the subjective experience of stigma, much of the literature examining stigma in the BD population measures it based on the experience of the affected individuals (Hawke et al., 2013).

Conclusions

Even with the presence of evidence-based treatments designed to directly remediate mood symptoms and episodes, employed individuals with BD are still at risk for severe difficulties with employment (Gitlin et al., 2011; Hammen et al., 2000; Keck et al., 1998; Strakowski et al., 1998; Tohen et al., 2003, 2012). Social workers, the frontline treatment providers for individuals with BD, should be at the forefront of innovation that broadens the scope of interventions beyond the individual level (i.e., clinical features of the disorder) to address the work environment as well. Future research needs within the field of social work should be aimed at targeting work stressors (i.e., exclusion and stigma at work) as well as the structural challenges found in the work environment (e.g., inflexible hours, lower wages, access to adequate health care coverage) that individuals with severe mental illness commonly experience. These innovations have the potential to improve work functioning and potentially prevent unemployment within this disadvantaged population. Overall, the development of psychosocial interventions that effectively address both clinical aspects of the disorder and employment difficulties have significant implications for this population by improving clinical outcomes, social functioning, financial security, self worth, and an overall quality of life.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Demographic, Mood, and Work Environment Characteristics of Working and Not-Working Groups (N = 129)

	Not Working <i>n</i> = 61	Working <i>n</i> = 68	
Variables	Mean (<i>SD</i>)	Mean (<i>SD</i>)	Group Difference
Demographics			
Age	46.59 (13.31)	51.12 (12.35)	<i>F</i> = 4.02 (1, 127) *
Nonmajority (Majority)	50 (9)	57 (9)	<i>X</i> ² (1, <i>N</i> = 125) = 0.07
Gender (Male)	47 (14)	54 (14)	<i>X</i> ² (1, <i>N</i> = 129) = 0.11
Mood			
BDI	19.43 (13.57)	10.33 (9.54)	<i>F</i> = 19.35 (1, 122) **
ASRM	2.90 (3.33)	1.63 (2.35)	<i>F</i> = 6.37 (1, 127) *
Work Environment			
Conflict at work	0.83 (0.71)	0.52 (0.60)	<i>F</i> = 6.52 (1, 118) *
Exclusion at work	2.73 (0.97)	3.43 (0.68)	<i>F</i> = 21.60 (1, 117) **
Social support	2.62 (0.75)	3.10 (0.66)	<i>F</i> = 12.60 (1, 107) *
Stigma impact on keeping a job	5.56 (3.27)	2.50 (2.54)	<i>F</i> = 33.64 (1, 119) **
Stigma impact on everyday work	5.44 (3.15)	2.70 (2.36)	<i>F</i> = 29.85 (1, 119) **
Frequency Distribution	<i>N</i>	<i>N</i>	
Education ^a			
Less than high school education	2	1	
High school graduate/general equivalency diploma (GED)	3	3	
Some college/no degree	15	13	
Associate's degree	8	6	
Bachelor's degree	17	24	
Graduate/professional degree	14	21	

Note. BDI = Beck Depression Inventory. ASRM = Altman Self-Rating Mania Scale. *SD* = standard deviation.

* $p < .05$.

** $p < .001$.

^a Total *N* for the not-working group for education is 59 due to two missing data points.

Table 2

Binomial Logistic Regression: Examining the Influence of Social Aspects of Work on Work Status (N = 129)

Variables	Odds Ratio (<i>OR</i>)	95% CI
BDI	0.98	[0.93, 1.03]
ASRM	0.88	[0.73, 1.05]
Age	0.99	[0.95, 1.03]
Education	1.43	[0.90, 2.30]
Social support at work	1.30	[0.49, 3.46]
Exclusion at work	2.73 *	[1.25, 5.97]
Conflict at work	1.97	[0.71, 5.45]
Stigma impact on keeping a job	0.72 **	[0.58, 0.90]

Note. BDI = Beck Depression Inventory. ASRM = Altman Self-Rating Mania Scale. *OR* > 1 indicates greater chance of working.

* *p* .05.

** *p* .001.

Table 3

Linear Regression: Examining the Influence of Social Aspects of Work on Work Functioning (N = 129)

Overall Model Fit (Adjusted R-Squared)	
0.041**	
Variables	Standardized B
BDI	0.07**
ASRM	0.07
Conflict at work	0.84*
Exclusion at work	0.37
Social support at work	−0.43
Stigma impact on everyday work	0.08

Note. BDI = Beck Depression Inventory. ASRM = Altman Self-Rating Mania Scale.

* $p < .05$.

** $p < .001$.