



Published in final edited form as:

J Affect Disord. 2019 August 01; 255: 127–135. doi:10.1016/j.jad.2019.05.039.

PEER SUPPORT FOR MOOD DISORDER: CHARACTERISTICS AND BENEFITS FROM ATTENDING THE DEPRESSION AND BIPOLAR SUPPORT ALLIANCE MUTUAL-HELP ORGANIZATION

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Abstract

Background—Mood disorders (MDs) are pervasive and debilitating psychiatric conditions. Many helpful psychological and psychopharmacological treatments exist, but MD's prevalence and chronicity often means relying purely on professional care can create financial strain on individuals and healthcare systems. Also, many individuals respond only partially to professionally-delivered medical/pharmacological interventions or are unable to tolerate or adhere to them. Peer-led mutual-help organizations (MHOs) have emerged and grown in the U.S. to extend and potentiate professional efforts or otherwise address needs unmet by professional care. The Depression and Bipolar Support Alliance (DBSA) is the largest of these, but beyond observational evidence, little is known about participation or benefits. Greater knowledge could inform the field regarding clinical and public health utility of peer-driven efforts.

Method—Community-based cross-sectional comparative investigation of MD individuals attending (N=202) or not attending (N=105) DBSA. Measures included demographics, clinical characteristics and clinical service use, and indices of symptomatology, functioning, quality of life (QOL), and psychological well-being.

Results—Compared to non-DBSA participants, DBSA participants were more likely to be male and white and trended toward greater religious affiliation ($p=.05$). DBSA participants attended meetings about twice per month with two-thirds attending for more than one year. The DBSA cohort had a much higher proportion with bipolar I disorder and reported more lifetime and past

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Conflicts of Interest

The authors report no conflicts of interest.

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90-day use of acute, intensive, medical services and medications. There were no between-group differences on indices of QOL or psychological well-being, but within the DBSA group, greater DBSA attendance and involvement was associated with greater QOL and well-being, and less functional impairment.

Limitations—Cross-sectional design and regional sampling frame with unknown generalizability to national DBSA membership.

Conclusion—Given the grave impact of MDs and that DBSA is freely available it may fill an important clinical and public health need by attracting and engaging MD individuals with greater functional instability and impairment. The positive association found between greater active DBSA participation and improvements in functioning and well-being, while promising, requires longitudinal investigation to formally establish the causal direction of effects.

Keywords

peer support; mood disorder; bipolar disorder; major depression; mutual help; mutual aid

INTRODUCTION

Mood disorders are among the most prevalent, intransigent, and pervasive mental health conditions affecting overall health, functioning, and quality of life. Worldwide, depression and bipolar disorders are estimated to be the first and seventh leading cause of disability among men, and the first and eighth leading causes of disability among women, respectively (World Health Organization, 2008). Furthermore, the World Health Organization (WHO) estimates that by 2020, depression will have the second largest disease burden worldwide (Fava and Cassano, 2008). In an attempt to ameliorate the personal and family distress and health and economic burden caused by mood disorders, increasingly sophisticated and rigorous research has been conducted into the causes, correlates, and maintaining conditions relating to the onset, course, and remission of these illnesses with myriad medical, behavioral, and psychopharmacological treatments developed. Despite encouraging treatment innovations, however, many individuals respond only partially to professionally-delivered medical and pharmacological interventions and/or are unable to adhere to or tolerate them well (Gianfrancesco et al., 2008). Estimates suggest as many as 70% of patients continue to suffer significant depressive symptoms after treatment and as many as 50% will discontinue pharmacologic treatment due to side effects (Connolly and Thase, 2012; Rosenblat et al., 2019). Even when helpful, the typically chronic nature of mood disorders, also means that relying on ongoing professional interventions alone can create a financial strain on individuals and health care systems (Russo et al., 2007; Sava et al., 2008).

Mental health recovery-focused mutual help organizations (MHOs) may represent a promising adjunct to professional services by providing continuous support at low or no cost and help engage individuals who shy away from professional care or cannot tolerate biological treatments. While such entities do occur internationally, they have played a particularly important role in addressing mental health and addiction problems in the United States where health insurance coverage is not automatic. MHOs differ from traditional, naturally occurring social support in that they are more structured and goal-oriented, rely on

specific processes and formats, and often possess specific approaches for addressing problems (Davidson et al., 1999). In a related area - in the treatment of substance use disorder (SUD) - such MHOs have shown great clinical and public health utility as an adjunct to clinical care (Humphreys and Moos, 2001; Kelly, 2017; Project MATCH Research Group, 1998; Walitzer et al., 2009), particularly among those with more severe SUD symptoms (Project MATCH Research Group, 1997, 1998). Participation in peer-led community groups, such as Alcoholics Anonymous (AA), following SUD treatment has been shown to produce at least 10–20% better outcomes than cognitive-behavioral therapy (CBT) alone, among patients initially treated for SUD (Kaskutas et al., 2008; Litt et al., 2009; Walitzer et al., 2009) and substantially higher rates of continuous remission (Project MATCH Research Group, 1997, 1998; Tonigan et al., 2003), while reducing healthcare costs (Humphreys and Moos, 2001; Humphreys and Moos, 1996, 2007; Mundt et al., 2012). As a result, the addiction treatment field has begun to forge stronger linkages to peer-led recovery MHOs like AA (Humphreys and Moos, 2001; Humphreys and Moos, 2007; Hunt et al., 1971; Kelly and Yeterian, 2012; McLellan et al., 2000). The high volume, high burden, chronic relapsing course similarities between mood and SUD could mean that MHOs also might be a cost-effective adjunct for mood disorders. However, while there are some positive findings for the use of peers in formal clinical roles and settings for severe mental illness (Chinman et al., 2014), little is known about the potential of peer-led community-based MHOs in the mental health field.

Peer-Led Mutual-help for Mood Disorder

The Depression and Bipolar Support Alliance (DBSA) is one example of an MHO for individuals suffering from mood disorders. Formerly known as the Manic Depressive and Depressive Association (MDDA;(Kurtz, 1988)), DBSA was founded in 1979 and currently consists of over 1,100 groups nationwide (Depression and Bipolar Support Alliance, 2019). As such, it is the largest peer-led organization for individuals with depression and bipolar disorder (O'Brien et al., 2004). DBSA operates completely independent from professional care, in typically 90-minute meetings in rented accommodation (e.g., hospital rooms, cafeterias, community spaces), and describes itself as providing peer support through the exchange of personal lived experiences, an atmosphere of acceptance and safety, confidentiality, opportunities for peer leadership, and additional resources for connections to professional help (DBSA, 2015). Other mutual-help groups exist also that focus on mood and anxiety, such as Emotions Anonymous, based on the 12-step program of Alcoholics Anonymous (AA, 2001), that may provide similar kinds of mutual support given the similar peer-led aspects of these other groups (Kelly et al, 2009). Although the emergence, growth, and prevalence of DBSA groups nationally is one kind of observational evidence of its ability to attract and potentially help a wide range of individuals and their loved ones, to date no research has been conducted to characterize attendees and begin to systematically evaluate its effectiveness. Some prior work has included DBSA participants in research related to mood disorders (e.g., (Murnane et al., 2016; Prochaska et al., 2011)), and one study examined the use and perceived helpfulness of wellness strategies (e.g., listening to music, socializing, getting adequate sleep) among DBSA members (Rosenblat et al., 2018), but studies characterizing DBSA members and the relationship between DBSA participation and indices of well-being and quality of life have not been reported to date. Greater

knowledge of MHOs such as DBSA could enhance treatment efforts by suggesting either clinical linkage to DBSA to amplify and extend the benefits of professional interventions or point toward the development and testing of alternatives. If found helpful, this could also lead to the further growth of this free resource for the many millions suffering from mood disorders.

The aim of the current study was to begin to fill this knowledge gap regarding the nature of this key support group, its membership, and its perceived utility by members. Using a sample of current DBSA members and a sample of individuals with mood disorder without prior or current DBSA participation, we 1. describe and compare demographic and clinical characteristics, including use of clinical services; 2. describe the nature and scope of DBSA participation among DBSA attendees; and 3. describe and compare DBSA members with individuals suffering from mood disorder without prior or current DBSA participation on indices of functioning, quality of life, and psychological well-being, and explore the relationships between the extent of DBSA participation and these indices. Given prior work in the SUD field regarding use of community peer support services (Hatch-Maillette et al., 2016; Kelly et al., 2000; Weiss et al., 2000), we hypothesized that DBSA participants would have a more severe clinical profile and that greater DBSA participation would be associated with better functioning, and improved quality of life and well-being.

METHODS

Procedure

DBSA participants (N=202) were recruited before or after DBSA meetings from November 2014–2016 from all New England chapters of the Depression and Bipolar Support Alliance. A group of individuals with mood disorder not enrolled in DBSA (i.e. non-DBSA attendees; N=105), were recruited from the New England area between March 2015 and November 2016 via study flyers, clinic announcements at our hospital-based and hospital-affiliated depression and bipolar disorder clinics, our hospital's clinical registry of potential research volunteers, and our related Facebook pages. Participants were 18 years of age, English-language proficient, and self-reported a current mood disorder diagnosis. In addition to these inclusion criteria, DBSA participants had to attend at least one DBSA meeting in the past month and non-DBSA attendees were eligible only if they lived in the New England region. Non-DBSA study participants were excluded from the study if they had any prior exposure to DBSA meetings. Participants were screened for study eligibility via telephone.

Of the 549 people who expressed interest in the study, 500 completed a telephone screen. Of the 500 people who were screened, 228 DBSA attendees and 114 non-DBSA attendees met inclusion criteria, from which 202 DBSA participants and 105 non-DBSA attendees enrolled. All non-DBSA participants and 62 of the enrolled DBSA participants (i.e., all who had initiated DBSA attendance in the past month) subsequently participated in longitudinal follow-up as part of the larger investigation. As such, data presented in the current report contain their baseline measures.

After providing informed consent, eligible participants completed a series of brief questionnaires, either online or in person with research personnel at the DBSA meeting sites.

DBSA participants enrolled in the cross-sectional design received a \$15 gift card for survey completion. All study methods and procedures were approved by the Partners HealthCare Institutional Review Board.

Measures

Demographics, Symptomatology, Functional Impairment & Diagnostic Status

—Demographic and clinical characteristics and service use histories were obtained with the Global Appraisal of Individual Needs-Initial (GAIN-I; (Dennis et al., 2003)). Participants reported past 90-day psychological distress and indicated which of 23 Axis-I and common Axis-II disorders they had ever been diagnosed with by a mental health professional (GAIN-I Mental and Emotional Health subsection). GAIN-I was also used to evaluate past-90-day frequency of being bothered by mental health symptoms, and the number of days on which such symptoms interfered with day to day function (Dennis et al., 2003). Also, if participants reported more than one diagnosis, they were asked which disorder caused the most distress.

Psychosocial Functioning & Life Satisfaction—Psychosocial functioning was assessed with the “general activities” section of the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), which contains 16 items measuring past-week satisfaction across several domains, including physical health, mood, work, social relations, finance, and leisure activities (Endicott et al., 1993). Each item is scored on a 1–5 Likert scale. Fourteen items are summed to provide a global measure of psychosocial functioning (range: 14–70) and a maximum percentage score (range: 0–100 %; (Raw Score - Minimum Possible Score)/(Maximum Possible Score - Minimum Possible Score)). “Normal” functioning can be defined as within 10% of a community norm raw score of 58 (Rapaport et al., 2005). A measure of overall life satisfaction, ranging from 1–5 (1=very poor, 5=very good), was obtained with the Q-LES-Q item: “How would you rate your overall life satisfaction and contentment during the past week?”. Higher scores indicate better psychosocial functioning and life satisfaction.

Participants completed the Satisfaction with Life Scale (SWLS), which measures global life satisfaction with 5 items, scored on a seven-point Likert scale. Scores range from 5–35, and indicate extreme dissatisfaction (score of 5–9), dissatisfaction (10–14), slightly below average dissatisfaction (15–19), average satisfaction (20–24), high satisfaction (25–29), and very high satisfaction (30–35) (Pavot and Diener, 2008). Participants also rated their current degree of happiness with life in general, using a 1–10 scale (1 = “completely unhappy” & 10 = “completely happy”; (Meyers and Smith, 1995).

DBSA Attendance, Engagement, and Involvement—Attendance at DBSA meetings was assessed as the total number of meetings attending during the 90 days. Also, based on our prior work with mutual help organizations (MHOs) (Kelly et al., 2011; Tonigan et al., 2000), and in consultation with DBSA leadership and members, we identified a pool of eight items designed to capture the essence of participation and involvement, which were used in the current study. All binary items were subjected to principal components analysis with varimax rotation, which yielded three factors with eigenvalues greater than 1. The first factor

loaded with four items including *ever helped set up or helped out at DBSA meetings in the past 3 months* (.80), *ever socialized with DBSA members outside of meetings in the past 3 months* (.76), *ever led or facilitated a DBSA meeting in the past 3 months* (.76), and *do you consider yourself a DBSA member* (.53), which explained 30% of the variance. Three items loaded on the second factor, including *ever used the Wellness Tracker on a mobile device in the past 3 months* (.85), *ever used the Wellness Tracker on the DBSA website in the past 3 months* (.81), and *friends/family ever attended DBSA meeting in the past 3 months* (.56) which explained 19% of the variance. The third factor consisted of a single item *ever accessed DBSA website other than to use the Wellness Tracker in the past 3 months* (.78) explaining 14% of the variance. Based on the goal of capturing member participation (as opposed to family) and face validity the best solution was four items from the first factor which appeared to reflect individual level DBSA involvement. Internal consistency was adequate $\alpha = .71$ and summed scores ranged from 0–4 with higher scores indicating more involvement in DBSA.

Analytic Plan—To describe DBSA and non-DBSA participants on demographics, clinical characteristics, clinical service use histories, indices of symptomatology, functioning, quality of life (QOL), and psychological well-being, we calculated means with standard deviations and medians, where appropriate, and percentages. To test if DBSA participants differed from non-DBSA participants, we used independent t-tests for continuous variables, and chi-square tests of categorical variables. To test if DBSA attendance and/or involvement were related to impairment or functioning in DBSA participants, we used Spearman correlations, due to the skew of the variables. Due to the exploratory and developmental nature of this study, we did not correct for multiple testing.

RESULTS

Demographic and Clinical Characteristics and Use of Clinical Services

As shown in Table 1. Demographics, DBSA members were predominantly White (88%), 44.2 ± 15.5 (mean \pm SD) years of age, well educated (e.g., 25% with a graduate degree), Christian (53%), and single (60%). While a substantial proportion of the participants were unemployed (47%) and/or had a low annual income (<\$25,000 a year), others were quite affluent (26% with >\$75,000). Compared to non-DBSA participants, DBSA participants were more likely to be White ($p = 0.0002$), and less likely to be female ($p = 0.01$).

The clinical profile (Table 2) of DBSA members was quite varied. The most common self-reported mood diagnoses were major depressive disorder (35%), bipolar I (29%) and bipolar II (23%) disorder. Additional mental health problems were also reported, including most commonly General anxiety disorder (33%), PTSD (31%), and social anxiety disorder (20%). Indeed, comorbidity was the norm rather than the exception in DBSA members, with 63% of DBSA participants reporting having a mood and anxiety disorder. DBSA members were most distressed by bipolar 1 disorder (22%). This clinical profile differed from non-DBSA participants in important ways. DBSA participants were more likely to have bipolar 1 disorder (29% vs. 13%, $p = 0.0017$) and less likely to have depressive disorder (9% vs. 20%,

$p=0.006$). Comorbidity with GAD (33% vs. 53%, $p=0.0007$) and agoraphobia (0.5% vs. 4%, $p=0.03$) were less common in DBSA participants.

Utilization of professional services was high, both lifetime and past 90-day use (Table 3). For example, 86% of DBSA members reported having seen a mental health therapist in the past 90 days, and 21% and 25% had been hospitalized or gone to the emergency department within the past 90 days for psychological problems. Medication use was also high, with 90% of DBSA participants reporting currently taking medication for mental, emotional, behavioral, or psychological problems. Compared to non-DBSA participants, these usage patterns were significantly higher, particularly for ED visits (22% vs. 7%, $p=0.0008$) and overnight hospitalizations (25% vs. 9%, $p=0.0007$) during the past 90 days. In post-hoc analyses, we probed if this higher service use was related to the higher prevalence of Bipolar 1 diagnoses in the DBSA sample. While there was some evidence of *lifetime* differences in ED visits between DBSA participants with and without Bipolar 1 (92% vs. 76%, $p=0.01$), during the past 90 days ED visits (20% vs. 23% for bipolar vs. non-bipolar DBSA members, $p=0.71$) and hospitalization (20% vs. 27%, $p=0.32$) were similar for both groups.

Nature and Scope of DBSA Participation

Most, but not all, DBSA participants indicated that they consider themselves to be DBSA members (76%; Table 4). Participants attended, on average, 7.1 ± 7.9 meetings during the past 90 days, or roughly, twice a month. Most participants had attended DBSA for more than a year (64%), and participants indicated initiating DBSA use at mean age 37 ± 14 . A substantial proportion of DBSA participants were referred to DBSA by clinicians (34%) and/or treatment facilities (23%). Involvement beyond attendance most commonly took the form of socializing with other DBSA members outside of meetings (54% in the past 90 days) and accessing the DBSA website (51%). A substantial proportion of DBSA members reported concurrent attendance by family members and friends (28%).

Relationships among DBSA Participation and Indices of Functioning, Quality of Life, and Life Satisfaction

Impairment due to psychological problems (Table 5) was experienced frequently by DBSA participants. DBSA participants reported feeling bothered by such problems on 47 ± 35 out of the past 90 days and being prevented by them from meeting responsibilities on 22 ± 28 days. Despite the frequency of this impairment, quality of life indices were within normal ranges on the Q-LES-Q, and only slightly below average satisfaction values on the SWLS. They scored in the moderate happiness range on the single-item happiness measure. Compared to non-DBSA participants, no differences were observed on impairment or functioning.

Among DBSA participants, both DBSA attendance and DBSA involvement were related to impairment and functioning in the expected direction (Table 5). That is, greater DBSA attendance was associated with lower impairment ($r=-.016$) and greater functioning ($r=0.15$), as was greater active DBSA involvement (impairment $r=-0.21$; functioning $r=0.26$).

DISCUSSION

This study presents findings from the first systematic investigation of the largest mood disorders-focused MHO in the U.S. - DBSA. Findings suggest that DBSA may serve an important need for those more severely impacted by mood disorder in general, and bipolar disorder, in particular; the latter group may have a greater need to use more services, including DBSA, to enhance affective stability and community living. Of note, compared to those mood disorder individuals not attending DBSA, DBSA attendees did not report better functioning, quality of life, or life satisfaction; but greater DBSA attendance, and especially active involvement, *were* significantly associated with better functioning and greater life satisfaction.

1. Demographic and Clinical Characteristics and Use of Clinical Services

When compared to individuals suffering from mood disorders without DBSA participation, those participating in DBSA were significantly more likely to be male, and white, and less likely to be black race/ethnicity. There was a trend also for DBSA participants to report belonging to a formal religious group (e.g., Catholic). Consistent with reports of increased prevalence of mood disorders among men and women who identify as LGBT (Bostwick et al., 2010), non-heterosexual identification was relatively common in both DBSA and non-DBSA participants. As noted below, the greater male representation among DBSA members may occur because it appears disproportionately to engage more individuals with Bipolar I disorder which, compared to major depression (which has substantially more female representation) has a comparatively higher proportion of males (i.e., it is equally prevalent among men and women in the general population). It is unclear why whites are disproportionately represented among DBSA members relative to the comparison non-DBSA mood disorder cohort. This could reflect a sample selection bias that may not be indicative of DBSA in general. For instance, the locations of the meetings from which our regional DBSA sample was drawn, was one where the racial-ethnic demographics were more likely to be white (e.g., the largest DBSA meeting was located in a predominantly white region of Massachusetts). The exact reasons, however, should be investigated further to help determine if black Americans with mood disorders are as aware of DBSA as whites, or if there is something about DBSA that is misunderstood or less appealing to black Americans. The reason for the slightly greater prevalence of religious affiliation among DBSA participants also is unclear but may be reflective of a greater familiarity and comfort with a social and community orientation to problem solving and healing that is central to faith communities that is also at the heart of MHOs such as DBSA.

Also, both groups were quite high on indices related to socio-economic status (SES). Specifically, well over half of each sample had a college degree or higher education and a quarter to one-third reported household incomes above \$50,000. Although it is unclear how typical this demographic profile is of all DBSA participants nationwide, this does suggest perhaps a more educated and financially well-off sample than might be typical of all DBSA participants.

In terms of clinical characteristics, there appears to be a fairly clear demarcation between DBSA participants and our comparison cohort. Specifically, the DBSA members had about

two and a half times as many individuals with the potentially more debilitating Bipolar I disorder compared to the comparison cohort, and DBSA members were more likely to report this as the most distressing problem. Conversely, the comparison non-DBSA mood disorder cohort, were more likely to report depression NOS as their main mood disorder diagnosis, and also report a higher prevalence of anxiety disorder comorbidity (notably, generalized anxiety disorder (GAD) and agoraphobia) with major depression and bipolar II as the most distressing. As alluded to above, DBSA may serve a particular need for those more severely affected by the attendant challenges of bipolar I disorder. Bipolar I mania, in particular, can cause substantially greater interpersonal and even legal problems, that may motivate such individuals and their families to seek the additional support that DBSA might potentially provide. Reflecting this potentially greater disability and impairment in the DBSA cohort, was the significantly higher prevalence in lifetime use of acute care services (e.g., emergency room visits). Thus, the greater use of clinical services in the DBSA cohort, may be indicative of a more general need for DBSA support. It could also be that those who participate in DBSA are also more likely to seek out formal treatment services as well (Sells et al, 2006; Jones et al, 2013), or simply that clinicians who treat bipolar disorder may be more aware of DBSA than those who treat depression and therefore may recommend it more with their patients.

2. Nature and Scope of DBSA Participation

Attendance at DBSA meetings among DBSA participants overall in the three months prior to the assessment was about twice per month on average. When one compares this degree of attendance to similar types of MHOs addressing SUD, like AA, this appears much less. This may be because there are just so much fewer community DBSA meetings available preventing more frequent attendance even if desired. Alternatively, it may be related to phenotypic differences between the two types of disorders with generally more internalizing phenotypes associated with mood disorders vs generally more externalizing phenotypes associated with SUD, with the latter involving much greater impulsivity (King et al., 2004). This may mean SUD requires more regular external supervision, oversight, monitoring, and input to help mitigate it, and thus more regular attendance is necessary. Also, SUD remission is related more to stimulus control (e.g., avoiding alcohol/drug-specific and related cues and environments) and helping sufferers to find social networks more conducive and supportive of recovery (Kelly et al., 2012). For mood disorders this is typically not the case. These differences in phenotype and phenomenology may be why there is a long tradition in SUD treatments settings to facilitate 12-step group (e.g., AA) community participation, while this is not the case, historically, in mood disorder treatment settings. Furthermore, as noted below, the QOL measures suggest that, compared to SUD samples, this DBSA sample has better QOL (Kelly et al., 2018), suggesting perhaps less of a need for more intensive use of peer support services.

Of note, similar to studies of MHO for SUD (Kelly et al., 2011; Stout et al., 2012), just over half of DBSA participants reported that they had socialized with other DBSA members outside of meetings. This suggests that, similar to AA research findings, perhaps one of the ways that DBSA works, is by stimulating social engagement. Such interaction can be a

pleasurable activity as well as stimulate behavioral activation - both important aspects of improving functioning and affect among those with mood disorders.

DBSA also often has simultaneous meetings at the same meeting venue for family and friends. Just over one quarter of DBSA participants in our sample reported that their family and/or friends attended DBSA. This suggests potentially additional value for family members in gaining support from other family members coping with the same problems, as well as the potential to positively influence broader family system dynamics through enhanced understanding of the clinical course and through the interpersonal exchange of effective family coping strategies as has been reported in other family-focused addiction MHOs (Kelly et al., 2017).

Other indices of DBSA involvement, such as helping to lead and/or set up at meetings, was also reported by a substantial minority. In contrast, while use of the DBSA website was quite high, there was little reported use of the new online and mobile health DBSA Wellness Tracker, designed to track symptoms and provide helpful resources to aid mood disorder stability and recovery. This is a relatively new addition to DBSA; thus, future research will be needed to uncover the extent of its reach and potential impact. Also, given several indices of the “involvement” measure reflect helping others, future research could examine how the degree of active DBSA involvement is related to time since joining and degree of functioning and symptomatology.

3. Relationships between DBSA Participation and Indices of Functioning, Quality of Life, and Life Satisfaction

DBSA participants compared to non-DBSA mood disorder individuals, were similar overall in terms of their levels of functioning, quality of life, and life satisfaction. What is unclear, is whether those attending DBSA would be at a greater disadvantage if they were not attending DBSA. In other words, the DBSA participation may be raising their levels of functioning and life satisfaction that would otherwise be much worse without it. While we assessed the frequency of days on which they were bothered by mental health symptoms, and the days on which those symptoms interfered with functioning, and found no between-group differences, not captured was the *intensity* of symptomatology experienced on such days. It is plausible that the intensity of symptoms, rather than purely the frequency, may account for a greater need for DBSA participation. We cannot answer this directly in this preliminary study, but the greater acute care service use (e.g., ED visits/hospitalizations) among the DBSA cohort, suggest a potentially greater instability, despite the greater use of pharmacological aids. In regard to the latter, the higher levels of medication use among the DBSA participants suggest that despite almost universal daily medication use, these individuals appear to find additional value in DBSA participation. We do not know why those suffering from mood disorder but not attending DBSA did not attend. This should be examined in future research to help determine whether it was just lack of knowledge of the existence of DBSA or being too distressed or impaired or other reasons.

Of note, was that among DBSA participants, there was a significant association in the expected direction between greater DBSA attendance and better functioning, and between active DBSA involvement and better functioning and life satisfaction, with stronger

relationships observed for the latter association. Similar to findings with SUD recovery-focused MHO samples (Kelly et al., 2013; Montgomery et al., 1995; Weiss et al., 2005), attending meetings, while a good start - particularly in terms of impacting functioning - may be unlikely to yield as much benefit as becoming more actively engaged in the organization, which may not only enhance functioning, but also life-satisfaction and happiness. Alternatively, it may just be that greater functioning and satisfaction allows some members to more actively engage in DBSA. Future longitudinal research is needed to disentangle this relationship.

Limitations

Generalizations and conclusions from the current study should be made cautiously in light of several limitations. First, the study is cross-sectional and inferences about cause and effect and longitudinal trends are speculative awaiting further controlled, prospective investigation. Better functioning individuals, for example, may have the ability to attend meetings, while those with poorer functioning may not, creating a self-selection bias. Also, the DBSA group is a regional, well-educated, mostly white, suburban sample, and a large proportion were referred by clinicians/treatment. It is unknown how typical these results might be of DBSA groups nationally. Also, the comparison group of individuals with mood disorders without any current or past history of DBSA involvement while recruited simultaneously from clinics and various other places were not matched specifically. Rather, these represented a convenience sample to provide a preliminary similar non-DBSA mood disorder comparison group. Also, measurements were made entirely from self-report which, while the standard in the field, relies on at least some degree of self-awareness and insight, the extent of which, is likely to vary across individuals. There was no formal measure of symptoms, but rather only how bothered participants were by such symptoms and how such symptoms affected functioning. It is possible too that some study participants may have completed the surveys illegitimately for financial gain without actually having a mood disorder or being a DBSA member. While we were careful about maximizing valid study inclusion, it is possible that estimates obtained in this study could nevertheless be biased as a result.

Conclusion

Given the grave and often chronic impact of mood disorders and DBSA's free availability and accessibility, DBSA may fill an important clinical and public health need by attracting and engaging MD individuals with greater functional instability and impairment. The positive association found between greater DBSA attendance, active DBSA participation, and better functioning and life satisfaction indices, while promising, require further longitudinal, and better controlled, comparative investigation to more formally establish the causal direction of these effects and help determine whether DBSA participation is providing meaningful benefits for mood disorder patients that could warrant systematic clinical referral and facilitation.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This work was supported by the U.S. National Institute of Mental Health (R21MH101271, PI: JOHN F. KELLY). JFK conceived of the study and wrote the protocol and first draft of the manuscript. BH conducted the statistical analyses; CV, RW, AN and LH all contributed to the writing, editing, and conceptualizing of the manuscript. All authors have reviewed and approved of the work.

Funding: The study was supported by the National Institute of Mental Health (NIMH) under grant R21MH101271 to the Massachusetts General Hospital (PI: John F. Kelly). Authors are also supported by K24AA22136 (JFK), F32AA025823 (CLV), and K24DA022288 (RDW).

Abbreviations

MD	mood disorder
MHO	mutual-help organization
DBSA	Depression and Bipolar Support Alliance
QOL	quality of life
WHO	World Health Organization
SUD	substance use disorder
CBT	cognitive behavioral therapy
AA	Alcoholics Anonymous
MDDA	Manic Depressive and Depressive Association
GAIN-I	Global Appraisal of Individual Needs-Initial
SWLS	Satisfaction with Life Scale
Q-LES-Q	Quality of Life Enjoyment and Satisfaction Questionnaire
SES	socio-economic status
GAD	generalized anxiety disorder

References

- Bostwick WB, Boyd CJ, Hughes TL, McCabe SE, 2010 Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States. *Am. J. Public Health* 100, 468–475. 10.2105/AJPH.2008.152942. [PubMed: 19696380]
- Chinman M, George P, Dougherty RH, Daniels AS, Ghose SS, Swift A, Delphin-Rittmon ME, 2014 Peer support services for individuals with serious mental illnesses: assessing the evidence. *Psychiatr. Serv.* 65, 429–441. 10.1176/appi.ps.201300244. [PubMed: 24549400]
- Connolly KR, Thase ME, 2012 Emerging drugs for major depressive disorder. *Expert Opin. Emerg. Drugs* 17, 105–126. 10.1517/14728214.2012.660146. [PubMed: 22339643]
- Dennis ML, Titus JC, White MK, Unsicker JI, Hodgkins D, 2003 Global appraisal of individual needs: Administration guide for the GAIN and related measures. Bloomington, IL: Chestnut Health Systems.
- Endicott J, Nee J, Harrison W, Blumenthal R, 1993 Quality of Life Enjoyment and Satisfaction Questionnaire: A new measure. *Psychopharmacol. Bull.* 29, 321–326. [PubMed: 8290681]

- Fava M, Cassano P, 2008 Mood Disorders: Major Depressive Disorder and Dysthymic Disorder, In: Stern TA, Rosenbaum JF, Fava M, Biederman J, Rauch SL (Eds.), *Comprehensive Clinical Psychiatry*. Elsevier, Philadelphia.
- Gianfrancesco FD, Sajatovic M, Rajagopalan K, Wang RH, 2008 Antipsychotic treatment adherence and associated mental health care use among individuals with bipolar disorder. *Clin. Ther* 30, 1358–1374. [PubMed: 18691997]
- Hatch-Maillette M, Wells EA, Doyle SR, Brigham GS, Daley D, DiCenzo J, Donovan D, Garrett S, Horigian VE, Jenkins L, Killeen T, Owens M, Perl HI, 2016 Predictors of 12-Step Attendance and Participation for Individuals With Stimulant Use Disorders. *J. Subst. Abuse Treat* 68, 74–82. 10.1016/MSat.2016.06.007. [PubMed: 27431050]
- Humphreys K, Moos R, 2001 Can encouraging substance abuse patients to participate in self-help groups reduce demand for health care? A quasi-experimental study. *Alcohol. Clin. Exp. Res* 25, 711–716. [PubMed: 11371720]
- Humphreys K, Moos RH, 1996 Reduced substance-abuse-related health care costs among voluntary participants in Alcoholics Anonymous. *Psychiatr. Serv.* 47, 709–713. [PubMed: 8807683]
- Humphreys K, Moos RH, 2007 Encouraging posttreatment self-help group involvement to reduce demand for continuing care services: two-year clinical and utilization outcomes. *Alcohol. Clin. Exp. Res.* 31,64–68. 10.1111/i.1530-0277.2006.00273.x. [PubMed: 17207103]
- Hunt WA, Barnett LW, Branch LG, 1971 Relapse rates in addiction programs. *J. Clin. Psychol* 27, 455–456. [PubMed: 5115648]
- Kaskutas LA, Ye Y, Greenfield TK, Witbrodt J, Bond J, 2008 Epidemiology of Alcoholics Anonymous participation. *Research on Alcoholics Anonymous and spirituality in Addiction Recovery. Recent Developments in Alcoholism* 18, 261–282. [PubMed: 19115774]
- Kelly JF, 2017 Are societies paying unnecessarily for an otherwise free lunch? Final musings on the research on Alcoholics Anonymous and its mechanisms of behavior change. *Addiction* 112, 943–945. 10.1111/add.13809. [PubMed: 28390078]
- Kelly JF, Fallah-Sohy N, Cristello JV, Bergman BG, 2017 Coping with the enduring unpredictability of opioid addiction: An investigation of a novel family-focused peer-support organization. *J. Subst. Abuse Treat* 77, 193–200. 10.1016/i.isat.2017.02.010. [PubMed: 28222927]
- Kelly JF, Greene MC, Bergman BG, 2018 Beyond Abstinence: Changes in Indices of Quality of Life with Time in Recovery in a Nationally Representative Sample of U.S. Adults. *Alcohol. Clin. Exp. Res* 42, 770–780. 10.1111/acer.13604. [PubMed: 29473966]
- Kelly JF, Hoepfner B, Stout RL, Pagano M, 2012 Determining the relative importance of the mechanisms of behavior change within Alcoholics Anonymous: A multiple mediator analysis. *Addiction* 107, 289–299. 10.1111/i.1360-0443.2011.03593.x. [PubMed: 21917054]
- Kelly JF, Myers MG, Brown SA, 2000 A multivariate process model of adolescent 12-step attendance and substance use outcome following inpatient treatment. *Psychol. Addict. Behav.* 14, 376389 10.1037/0893-164x.14.4.376.
- Kelly JF, Stout RL, Slaymaker V, 2013 Emerging adults' treatment outcomes in relation to 12-step mutual-help attendance and active involvement. *Drug Alcohol Depend.* 129, 151–157. 10.1016/i.drugalcdep.2012.10.005. [PubMed: 23122600]
- Kelly JF, Urbanoski K, Hoepfner B, Slaymaker V, 2011 Facilitating comprehensive assessment of 12-step experiences: A multidimensional measure of mutual-help activity. *Alcoholism Treatment Quarterly* 29, 181–203. 10.1080/07347324.2011.586280. [PubMed: 22081741]
- Kelly JF, Yeterian JD, 2012 Empirical awakening: The new science on mutual help and implications for cost containment under health care reform. *Subst. Abus.* 33, 85–91. 10.1080/08897077.2011.634965. [PubMed: 22489579]
- King SM, Iacono WG, McGue M, 2004 Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction* 99, 1548–1559. 10.1111/U360-0443.2004.00893.x. [PubMed: 15585046]
- Kurtz LF, 1988 Mutual aid for affective disorders: the manic depressive and depressive association. *Am. J. Orthopsychiatry* 58, 152–155. 10.1111/i.1939-0025.1988.tb01576.x. [PubMed: 3344801]

- Litt MD, Kadden RM, Kabela-Cormier E, Petry NM, 2009 Changing network support for drinking: network support project 2-year follow-up. *J. Consult. Clin. Psychol.* 77, 229–242. 10.1037/a0015252. [PubMed: 19309183]
- McLellan AT, Lewis DC, O'Brien CP, Kleber HD, 2000 Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. *JAMA* 284, 1689–1695. <https://doi.org/10.1001/jama.284.12.1689> [pii]. [PubMed: 11015800]
- Meyers RJ, Smith JE, 1995 *Clinical guide to alcohol treatment: The Community Reinforcement Approach*. Guilford Press, New York, NY.
- Montgomery HA, Miller WR, Tonigan JS, 1995 Does Alcoholics Anonymous involvement predict treatment outcome? *J. Subst. Abuse Treat.* 12, 241–246. <https://doi.org/10.1016/j.jsat.1995.05.002> [pii]. [PubMed: 8830150]
- Mundt MP, Parthasarathy S, Chi FW, Sterling S, Campbell CI, 2012 12-Step participation reduces medical use costs among adolescents with a history of alcohol and other drug treatment. *Drug Alcohol Depend.* 10.1016/i.drugalcdep.2012.05.002.
- Murnane EL, Cosley D, Chang P, Guha S, Frank E, Gay G, Matthews M, 2016 Self-monitoring practices, attitudes, and needs of individuals with bipolar disorder: implications for the design of technologies to manage mental health. *J. Am. Med. Inform. Assoc.* 23, 477–484. 10.1093/iamia/ocv165. [PubMed: 26911822]
- O'Brien CP, Charney DS, Lewis L, Cornish JW, Post RM, Woody GE, Zubieta JK, Anthony JC, Blaine JD, Bowden CL, Calabrese JR, Carroll K, Kosten T, Rounsaville B, Childress AR, Oslin DW, Pettinati HM, Davis MA, Demartino R, Drake RE, Fleming MF, Fricks L, Glassman AH, Levin FR, Nunes EV, Johnson RL, Jordan C, Kessler RC, Laden SK, Regier DA, Renner JA Jr., Ries RK, Sklar-Blake T, Weisner C, 2004 Priority actions to improve the care of persons with co-occurring substance abuse and other mental disorders: a call to action. *Biol. Psychiatry* 56, 703–713. 10.1016/i.biopsych.2004.10.002. [PubMed: 15556110]
- Pavot W, Diener E, 2008 The Satisfaction With Life Scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology* 3, 137–152. 10.1080/17439760701756946.
- Prochaska JJ, Reyes RS, Schroeder SA, Daniels AS, Doederlein A, Bergeson B, 2011 An online survey of tobacco use, intentions to quit, and cessation strategies among people living with bipolar disorder. *Bipolar Disord.* 13, 466–473. 10.1111/j.1399-5618.2011.00944.x. [PubMed: 22017216]
- Project MATCH Research Group, 1997 Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *J. Stud. Alcohol*, 1–23. 10.1046/U360-0443.1997.9212167110.x.
- Project MATCH Research Group, 1998 Matching alcoholism treatments to client heterogeneity: Project MATCH three-year drinking outcomes. *Alcohol. Clin. Exp. Res.* 22, 1300–1311. 10.1093/ptr/8.4.455. [PubMed: 9756046]
- Rapaport MH, Clary C, Fayyad R, Endicott J, 2005 Quality-of-life impairment in depressive and anxiety disorders. *Am. J. Psychiatry* 162, 1171–1178. 10.1176/appi.ajp.162.6.1171. [PubMed: 15930066]
- Rosenblat JD, Simon GE, Sachs GS, Deetz I, Doederlein A, DePeralta D, Dean MM, McIntyre RS, 2018 Frequency of use and perceived helpfulness of wellness strategies for bipolar and unipolar depression. *Ann. Clin. Psychiatry* 30, 296–304. [PubMed: 30372507]
- Rosenblat JD, Simon GE, Sachs GS, Deetz I, Doederlein A, DePeralta D, Dean MM, McIntyre RS, 2019 Treatment effectiveness and tolerability outcomes that are most important to individuals with bipolar and unipolar depression. *J. Affect. Disord.* 243, 116–120. 10.1016/i.iad.2018.09.027. [PubMed: 30241026]
- Russo CA, Hambrick MM, Owens PL, 2007 Hospital Stays Related to Depression, 2005, In: Project, H.C.a.U. (Ed.), *Statistical Brief Agency for Healthcare Research and Quality*, Rockville.
- Sava DK, Levit KR, Elixhauser A, 2008 Hospital Stays Related to Mental Health, 2006, In: Project, H.C.a.U. (Ed.), *Statistical Brief Agency for Healthcare Research and Quality*, Rockville.
- Stout RL, Kelly JF, Magill M, Pagano ME, 2012 Association between social influences and drinking outcomes across three years. *J. Stud. Alcohol Drugs* 73, 489–497. [PubMed: 22456254]

- Tonigan JS, Connors GJ, Miller WR, 2003 Participation and involvement in Alcoholics Anonymous, In: Babor TF, Del Boca FK (Eds.), Matching alcoholism treatments to client heterogeneity: The results of Project MATCH. Cambridge University Press, New York, NY, pp. 184–204.
- Tonigan JS, Miller WR, Connors GJ, 2000 Project MATCH client impressions about Alcoholics Anonymous: Measurement issues and relationship to treatment outcome. *Alcoholism Treatment Quarterly* 18, 25–41.
- Walitzer KS, Dermen KH, Barrick C, 2009 Facilitating involvement in Alcoholics Anonymous during out-patient treatment: a randomized clinical trial. *Addiction* 104, 391–401. 10.1111/i.1360-0443.2008.02467.x. [PubMed: 19207347]
- Weiss RD, Griffin ML, Gallop R, Onken LS, Gastfriend DR, Daley D, Crits-Christoph P, Bishop S, Barber JP, 2000 Self-help group attendance and participation among cocaine dependent patients. *Drug Alcohol Depend.* 60, 169–177. [https://doi.org/S0376-8716\(99\)00154-4](https://doi.org/S0376-8716(99)00154-4) [pii]. [PubMed: 10940544]
- Weiss RD, Ostacher MJ, Otto MW, Calabrese JR, Fossey M, Wisniewski SR, Bowden CL, Nierenberg AA, Pollack MH, Salloum IM, Simon NM, Thase ME, Sachs GS, 2005 Does recovery from substance use disorder matter in patients with bipolar disorder? *J. Clin. Psychiatry* 66, 730–735; quiz 808–739. [PubMed: 15960566]
- World Health Organization, 2008 The global burden of disease: 2004 update, Geneva.

Highlights

- Many suffering from mood disorders (MDs) do not respond to conventional treatments
- Peer-led groups like the Depression and Bipolar Support Alliance (DBSA) may help
- Greater DBSA participation is associated with better functioning and well-being
- Comparative prospective research is needed to confirm these preliminary findings

Table 1.

Demographics

	<u>DBSA Participants</u>		<u>Non-DBSA Participants</u>		<i>p</i>
	<u>n=202</u>		<u>n=105</u>		
	mean / %	(SD) / (n)	mean / %	(SD) / (n)	
Age	42.3	(15.5)	41.7	(16.1)	0.78
Gender (% female)	53.5	(108)	65.7	(69)	0.01
Race					
White	88.1	(178)	75.2	(79)	0.00
Asian	4.5	(9)	4.8	(5)	
Black	3.0	(6)	17.1	(18)	
Other	4.5	(9)	2.9	(3)	
Hispanic (% yes)	5.0	(10)	1.9	(2)	0.19
Education					0.23
High school / GED or less	30.2	(61)	38.1	(40)	
College degree (incl. associate's)	44.1	(89)	34.3	(36)	
Graduate degree (master's, JD, etc.)	25.7	(52)	24.8	(26)	
Religion					0.05
None	26.2	(53)	41.9	(44)	
Catholic	28.2	(57)	16.2	(17)	
Protestant	13.4	(27)	13.3	(14)	
Nondenominational Christian	11.4	(23)	8.6	(9)	
Jewish	13.4	(27)	9.5	(10)	
Other Religion	7.4	(15)	4.8	(5)	
Marital status					0.54
Married, living together	21.3	(43)	21.0	(22)	
Divorced, separated	14.4	(29)	18.1	(19)	
Widowed	1.5	(3)	3.8	(4)	
Not married, not living as married	60.4	(122)	53.3	(56)	
Sexual orientation (% heterosexual)	78.7	(159)	72.4	(76)	0.24
Employment					0.91
Unemployed	46.5	(94)	46.7	(49)	
Part-time	27.7	(56)	25.7	(27)	
Full-time	25.7	(52)	27.6	(29)	
Annual household income					0.47
< \$25,000	41.1	(83)	50.5	(53)	
\$25,000-\$50,000	21.8	(44)	20.0	(21)	
\$50,000-\$75,000	10.9	(22)	11.4	(12)	
\$75,000-\$100,000	12.4	(25)	7.6	(8)	
>\$100,000	13.9	(28)	10.5	(11)	
Disability benefits (% yes)	39.1	(79)	31.4	(33)	0.32
Ever been arrested (% yes)	20.8	(42)	21.9	(23)	0.82

	DBSA Participants		Non-DBSA Participants		<i>p</i>
	n=202		n=105		
	mean / %	(SD) / (n)	mean / %	(SD) / (n)	
If yes, median # of times	2		2		
Ever stayed in jail overnight (% yes)	16.8	(34)	15.2	(16)	0.70
If yes, median # of times	1.0		2.0		

DBSA = Depression Bipolar Support Alliance; DBSA Participants = Mood disorder patients with past-month DBSA attendance; Non-DBSA Participants = Individuals with mood disorder, without prior/current exposure to DBSA.

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Table 2.

Clinical profile

	<u>DBSA Participants</u>		<u>Non-DBSA Participants</u>		<i>p</i>
	<u>n=202</u>		<u>n=105</u>		
	<u>%</u>	<u>(n)</u>	<u>%</u>	<u>(n)</u>	
Ever been diagnosed with a mental or psychological problem? (% yes)	97.5	197	100.0	(105)	0.30
<u>Diagnosis</u>					
<i>mood disorder diagnosis</i>					
Bipolar I Disorder	29.2	(59)	13.3	(14)	0.00
Bipolar II Disorder	23.3	(47)	20.0	(21)	0.50
Bipolar Disorder NOS	9.9	(20)	10.5	(11)	0.88
Cyclothymic Disorder	2.0	(4)	1.9	(2)	0.96
Major Depressive Disorder	35.1	(71)	45.7	(48)	0.08
Depressive Disorder NOS	8.9	(18)	20.0	(21)	0.01
Dysthymic Disorder	4.0	(8)	4.8	(5)	0.75
Mood Disorder Due to a Gene	2.0	(4)	3.8	(4)	0.34
Mood Disorder Not Otherwise	8.4	(17)	13.3	(14)	0.18
Schizoaffective Disorder	7.4	(15)	5.7	(6)	0.57
Substance-Induced Mood Disorder	3.0	(6)	3.8	(4)	0.70
<i>additional mental health problems</i>					
Alcohol Use Disorder	11.9	(24)	18.1	(19)	0.14
Other Drug Use Disorder	7.9	(16)	10.5	(11)	0.46
Bulimia	5.0	(10)	3.8	(4)	0.64
Anorexia	5.9	(12)	2.9	(3)	0.23
PTSD	30.7	(62)	36.2	(38)	0.34
Agoraphobia	0.5	(1)	3.8	(4)	0.03
Panic Disorder	13.4	(27)	17.1	(18)	0.38
General Anxiety Disorder	33.2	(67)	53.3	(56)	0.00
OCD	13.4	(27)	14.3	(15)	0.84
Social Anxiety Disorder	19.8	(40)	18.1	(19)	0.70
Specific Phobia	1.0	(2)	1.0	(1)	0.97
Other	14.9	(30)	15.2	(16)	0.94
<u>Comorbidity</u>					
<i>Co-occurring disorders</i>					
no mood disorder	0.5	(1)	1.9	(2)	0.24
mood disorder and no other disorders	23.8	(48)	17.1	(18)	0.18
mood disorder and any anxiety disorder	63.4	(128)	74.3	(78)	0.05
mood disorder and any SUD	15.8	(32)	24.8	(26)	0.06
mood disorder & anxiety & SUD	8.9	(18)	21.0	(22)	0.00
Most distressed by... (top 3, respectively)					0.00
Bipolar I Disorder	21.8	(44)	3.8	(4)	
Major Depressive Disorder	15.8	(32)	25.7	(27)	

	DBSA Participants		Non-DBSA Participants		<i>p</i>
	n=202		n=105		
	%	(n)	%	(n)	
Generalized Anxiety Disorder	11.4	(23)	18.1	(19)	
Bipolar II Disorder	5.9	(12)	29.5	(31)	

DBSA = Depression and Bipolar Support Alliance; DBSA Participants = Mood disorder patients with past-month DBSA attendance; Non-DBSA Participants = Individuals with mood disorder, without prior/current exposure to DBSA.

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Table 3.

Utilization of Professional Services and Medication

	<u>DBSA Participants</u>			<u>Non DBSA Participants</u>			<i>p</i>
	<u>n=202</u>			<u>n=105</u>			
	<u>% yes</u>	<u>(n)</u>	<u>median</u>	<u>% yes</u>	<u>(n)</u>	<u>median</u>	
<u>Professional Service Utilization</u>							
<i>Lifetime ... (% yes; n; if yes, median # of times)</i>							
... treated in an emergency room for psychological problems	77.2	(156)	3	52.4	(55)	3	<.0001
... treated in an emergency room for alcohol/drug problems	12.9	(26)	3	18.1	(19)	2	0.23
... been hospitalized at least one night for psychological problems	80.2	(162)	3	49.5	(52)	3	<.0001
... been hospitalized at least one night for alcohol/drug problems	9.9	(20)	3	16.2	(17)	2	0.11
<i>Past 90 days ... (% yes; n; if yes, median # of times)</i>							
... seen a therapist for mental health problems	85.6	(173)	12	78.1	(82)	9.5	0.08
... seen a therapist for alcohol/drug problems	6.9	(14)	8.5	7.6	(8)	4	0.83
... treated in an emergency room for psychological problems	21.8	(44)	1	6.7	(7)	1	0.00
... treated in an emergency room for alcohol/drug problems	3.0	(6)	1	1.0	(1)	7	0.26
... been hospitalized at least one night for psychological problems	24.8	(50)	10	8.6	(9)	3	0.00
... been hospitalized at least one night for alcohol/drug problems	2.5	(5)	5	5.7	(6)	4	0.14
<u>Medication</u>							
Currently taking medication for mental, emotional, behavioral, or psychological problems	90.1	(182)		76.2	(80)		0.00
Currently taking any medication for alcohol and/or drug problems	3.0	(6)		1.9	(2)		0.57
<i>Past 90 days ... (% yes; n; if yes, median # of times)</i>							
... seen a healthcare professional for medication visits	87.1	(176)	3	76.2	(80)	3	0.01
... taken prescribed medication for psychological problems	90.1	(182)	90	74.3	(78)	90	<.0001
... taken prescribed medication for alcohol/drug problems	3.0	(6)	62.5	1.9	(2)	90	0.57

p compares “% yes”; DBSA = Depression Bipolar Support Alliance; DBSA Participants = Mood disorder patients with past- month DBSA attendance; Non-DBSA Participants = Individuals with mood disorder, without prior/current exposure to DBSA.

Table 4.

DBSA Involvement

	DBSA Participants		
	n=202		
	mean / %	(SD) / (n)	median
DBSA member (% yes)	76.2	(154)	
# of meetings in past 3 months	7.1	(7.9)	
# of meetings lifetime (median)	22.5		
Age at first DBSA meeting	36.8	(13.6)	
Time since first meeting			
less than 1 year	35.6	(72)	
1 year or more	63.9	(129)	
If at least 1 year, # of years since first DBSA meeting	8.4	(8.3)	
How did you hear about DBSA?			
Referral from clinician/health provider	34.2	(69)	
Treatment facility	23.3	(47)	
Friend/family member	20.3	(41)	
Internet	15.3	(31)	
Reading materials	5.4	(11)	
Other advertisement	1.0	(2)	
Other	6.9	(14)	
Ever stopped attending for 3+ months (% yes)	38.6	(78)	
In the past 3 months ... (% yes; n; if yes, median # of times)			
... socialized with DBSA member	54.0	(109)	3
... family/friends also attended	27.7	(56)	3
... led or facilitated DBSA meetings	18.3	(37)	5
... helped set up or helped out at DBSA meetings	27.7	(56)	3
... used the Wellness Tracker on the DBSA website	5.4	(11)	2
... used the Wellness Tracker on a mobile device	5.9	(12)	2
... accessed the DBSA website (not Wellness Tracker)	51.0	(103)	3

DBSA = Depression Bipolar Support Alliance; DBSA Participants = Mood disorder patients with past-month DBSA attendance

Table 5.

Functioning

	<u>DBSA Participants</u>		<u>Non-DBSA Participants</u>		<u>Group Difference</u>	<u>Correlation with DBSA variables</u>			
	<u>n=202</u>		<u>n=105</u>		<u>p</u>	<u># of meetings</u>		<u>Involvement</u>	
	<u>mean</u>	<u>(SD)</u>	<u>mean</u>	<u>(SD)</u>		<u>r</u>	<u>*</u>	<u>r</u>	<u>*</u>
Impairment: # of days ...									
... bothered by any nerve, mental, or psychological problems	47.3	(35.4)	52.4	(34.2)	0.22	-0.15	*	-0.13	
... these problems keep you from meeting your responsibilities	22.5	(28.4)	26.1	(28.9)	0.29	-0.16	*	-0.21	**
Functioning and Life Satisfaction									
Q-LES-Q (psychosocial functioning, in %)	52.3	(17.7)	49.2	(16.6)	0.14	0.15	*	0.26	**
Q-LES-Q - #16 - past week life satisfaction	3.1	(1.1)	2.9	(1.0)	0.16	0.12		0.18	*
SWLS - Satisfaction with Life Scale	15.5	(7.9)	15.0	(7.7)	0.55	0.09		0.22	**
Happiness (single item)	5.5	(2.2)	5.0	(2.2)	0.10	0.05		0.21	**

Values reflect self-reported functioning in the past 90 days; DBSA = Depression Bipolar Support Alliance; DBSA Participants = Mood disorder patients with past-month DBSA attendance; Non-DBSA Participants = Individuals with mood disorder, without prior/current exposure to DBSA.

* Spearman correlation with DBSA variable significant at $p < 0.05$

** Spearman correlation with DBSA variable significant at $p < 0.01$