

# Self-Reported Benefits and Risks of Yoga in Individuals with Bipolar Disorder

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**Background.** Although hatha yoga has frequently been recommended for patients with bipolar disorder (BD) and there is preliminary evidence that it alleviates depression, there are no published data on the benefits—and potential risks—of yoga for patients with BD. Thus, the goal of this study was to assess the risks and benefits of yoga in individuals with BD. **Methods.** We recruited self-identified yoga practitioners with BD ( $N = 109$ ) to complete an Internet survey that included measures of demographic and clinical information and open-ended questions about yoga practice and the impact of yoga. **Results.** 86 respondents provided sufficient information for analysis, 70 of whom met positive screening criteria for a lifetime history of mania or hypomania. The most common styles of yoga preferred were hatha and vinyasa. When asked what impact yoga had on their life, participants responded most commonly with positive emotional effects, particularly reduced anxiety, positive cognitive effects (e.g., acceptance, focus, or “a break from my thoughts”), or positive physical effects (e.g., weight loss, increased energy). Some respondents considered yoga to be significantly life changing. The most common negative effect of yoga was physical injury or pain. Five respondents gave examples of specific instances or a yoga practice that they believed increased agitation or manic symptoms; five respondents gave examples of times that yoga increased depression or lethargy. **Conclusions.** Many individuals who self-identify as having BD believe that yoga has benefits for mental health. However, yoga is not without potential risks. It is possible that yoga could serve as a useful adjunctive treatment for BD. (*Journal of Psychiatric Practice* 2014;20:345–352)

**KEY WORDS:** bipolar disorder, hatha yoga, risks, benefits

Bipolar disorder (BD) is a serious, disabling illness associated with significant morbidity<sup>1,2</sup> and mortality.<sup>3</sup> Despite the availability of numerous evidence-based pharmacologic<sup>4</sup> and psychosocial<sup>5</sup> interventions,

individuals with BD remain symptomatically ill for roughly 50% of their lives, which has been largely attributed to the persistence of depressive symptoms over time.<sup>1,2</sup> This depression-predominant course of illness in BD is particularly troubling because it is associated with generally poor response to available pharmacologic interventions<sup>6</sup> and because it contributes to the strikingly high risk of suicide in individuals with BD.<sup>3</sup> Thus, a great need remains to develop additional treatments for BD, and particularly for bipolar depression.

Yoga is an ancient Indian system of philosophy and practice.<sup>7,8</sup> Over the course of a year, approximately 5% of adults in the United States practice yoga.<sup>9</sup> Most practice hatha yoga, which involves training the body with the ultimate goal of physical and emotional self-transformation.<sup>10</sup> Hatha yoga often includes breathing practices (pranayama), physical postures (asanas), and meditation (dhyana). Many different styles of hatha yoga are taught in the United States; styles may range from very gentle to energetic, and they may focus on one or more of the practices described above or other practices (e.g., vocalizations, chanting). Because yoga can involve physical activity that results in increased heart rate and respiration, it is not surprising that yoga is associated with improved cardiopulmonary fitness and exercise capacity.<sup>11–14</sup> The practice of yoga asanas has been reported to result in increased flexibility over time,<sup>15</sup> and holding postures can build muscle strength and endurance.<sup>16</sup> Yoga also often involves the practice of mindfulness of body sen-

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Acknowledgements: Parts of this work were presented at the 10th International Conference on Bipolar Disorders, Miami Beach, FL, June 2013. The abstract is published: Weinstock LM, Kraines MA, Uebelacker LA. Self-reported risks and benefits of yoga among individuals with bipolar disorder. *Bipolar Disord* 2013;15(suppl 1):92.

The authors declare no conflicts of interest.

DOI: 10.1097/01.pra.0000454779.59859.f8

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sations, breath, thoughts, or feelings during explicit meditation practice and also while holding postures, moving from one posture to the next, and engaging in breathing practices. One definition of mindfulness involves two components: “the self-regulation of attention so that it is maintained on immediate experience” and having an “orientation towards one’s experiences...that is characterized by curiosity, openness, and acceptance.”<sup>17</sup>

To the best of our knowledge, no research has been published on yoga for patients with BD.<sup>18,19</sup> However, there are reasons to believe it may be helpful for individuals with BD. First, as discussed above, depression is by far the predominant symptomatic state in BD, and there is some preliminary evidence to suggest that yoga may be helpful in alleviating depressive symptoms.<sup>20</sup> There are numerous plausible mechanisms for yoga’s impact on depression, such as decreased rumination or worry, decreased self-criticism, regulation of the autonomic nervous system, or reduced inflammation.

Second, relevant to the fact that two key components of yoga are physical activity and mindfulness, in a qualitative study of high functioning individuals with BD, several participants mentioned exercise and/or meditative practices as being important ways to maintain good functioning.<sup>21</sup> Weber and colleagues<sup>22</sup> conducted a study of the feasibility of mindfulness-based cognitive therapy (MBCT) for BD. MBCT is a therapy in which participants are taught to practice mindfulness meditation as well as some basic yoga practices. In this open trial with patients with BD, MBCT was generally well-accepted.<sup>22</sup>

Third, it is possible that a consistent yoga practice will help regulate the social and circadian rhythms that influence the course of mood symptoms.<sup>23,24</sup> Melatonin is thought to be involved in the regulation of the sleep-wake cycle, and there is some preliminary evidence that yoga practice at night may increase nighttime plasma melatonin levels.<sup>25</sup> Finally, a calming yoga practice during hypomanic states could be used to calm the body and perhaps slow down racing thoughts.

However, yoga practice is not without the possibility of iatrogenic effects in BD. There is concern that exercise could intensify manic or hypomanic symptoms<sup>26</sup> or that rapid cyclic breathing might increase risk of mania.<sup>27</sup> There have also been case reports of intensive meditation or yoga practice precipitating mania or psychosis<sup>28</sup> or being associated with

depression, confusion, or disorientation,<sup>29</sup> or of a shorter meditation practice inducing flashbacks.<sup>30</sup> Brown and Gerbarg also asserted that yogic breathing can lower lithium levels by increasing lithium excretion.<sup>27</sup> Of course, there is also a risk of injury with any physical activity; this risk could be exacerbated when one’s judgment is impaired due to inflated self-esteem or other symptoms of mood episodes.

### OBJECTIVE

Despite numerous conceptual arguments that support the potential benefits and risks of yoga for BD, empirical evidence to support such arguments is limited. Thus, the primary goal of this study was to evaluate the impact of yoga in a sample of self-identified yoga practitioners who reported having a diagnosis of BD. We asked several exploratory questions to characterize the sample and gain an understanding of the potential benefits and risks of yoga in this group. We also asked about specific practices that respondents found particularly helpful or harmful. The secondary aim of this study was to lay the groundwork for the future study of the practice of yoga as an adjunctive intervention for people with BD.

### METHODS

#### Participants

Participants were recruited via web-based advertising (e.g., on Craigslist in various cities all over the United States, on mood disorders research websites) and fliers located at yoga studios and mood disorder clinics. Participants were invited to complete a survey on surveymonkey.com if 1) they were 18 years of age or older; 2) they had a diagnosis of BD or manic-depression; and 3) they practiced yoga. All participants indicated that they met these inclusion criteria.

A total of 109 individuals consented to participate in the study. However, many did not complete the entire survey. We chose to include only those who completed a) information about their BD symptoms, and b) at least the first question about yoga participation. We also excluded 2 participants who clearly responded to the survey in a nonsensical way. The total number of individuals with data available for analyses was 86. This sample included 11 men and 75 women, with an average age of 33 years (standard deviation [SD] = 12 years); 3 participants reported

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being Asian, 1 native Hawaiian/Pacific Islander, 5 African American, 66 White, 8 other, and 5 chose “I prefer not to answer” (2 people checked two categories for race). Seven participants said they were Hispanic or Latino.

### Measures

We first asked participants to provide demographic information. Second, we asked them to respond to the Mood Disorder Questionnaire (MDQ).<sup>31</sup> This self-report questionnaire asks about 13 symptoms of mania/hypomania, whether these symptoms occurred during the same time period, and degree of impairment as a result of these symptoms. Having at least 7 symptoms that occurred at the same time and that resulted in at least mild impairment can be considered a positive screen.<sup>32</sup> As part of the MDQ, participants were asked about impairment: “How much of a problem did any of these [manic/hypomanic symptoms] cause you—like being unable to work; having family, money or legal troubles; getting into arguments or fights?” Response options were: no problem, minor problem, moderate problem, and serious problem. Third, we asked participants to provide some details about their history of BD, such as age of onset, treatment, and whether they considered themselves to have bipolar I disorder, bipolar II disorder, or unknown. Finally, we asked about yoga practice. We asked participants about why they practiced yoga, length of time practicing, how frequently they practiced, and preferred style of yoga. We asked participants 4 yes/no questions about the impact of yoga on their depressive and manic/hypomanic symptoms and whether they had experienced any negative effects or negative impact on symptoms related to yoga. We also asked a number of open-ended questions, including “What impact do you think yoga has on your life?” “How does yoga modify your depressive symptoms?” “How does yoga modify manic or hypomanic symptoms?” “If you have experienced any negative effects related to yoga or negative impact on your bipolar disorder symptoms, what happened?”

### Procedures

This study was approved by the Institutional Review Board at Butler Hospital in Providence, RI. All potential participants were directed to a survey on

surveymonkey.com. The first page included all elements of informed consent; if the participant agreed to participate, he or she pressed a button to indicate consent and went on to complete the rest of the survey. Participants did not provide contact information and were not paid for their participation.

### Data Analysis

We used descriptive statistics to characterize the quantitative data collected. We examined the association between lifetime impairment due to mania/hypomania and categorical questions regarding impact (positive or negative) of yoga using chi-square tests. With regard to qualitative data analysis, we used a template organizing style.<sup>33</sup> Using an iterative approach, the first author (LU) developed a codebook with categories of responses. The second author (LW) refined the codebook and the third author (MK) then categorized the responses. LU and LW each reviewed categorized responses, made modifications, and then the entire research team discussed and resolved any differences of opinion. We analyzed responses to each question separately, with the exception that we combined responses from the question “Have you experienced any negative effects due to yoga?” and “Has yoga ever had a negative impact on your bipolar disorder symptoms?”

## RESULTS

### Bipolar Disorder Symptoms and Treatment

Of the 86 participants who provided data, 70 met positive screening criteria for a lifetime history of mania or hypomania based on responses to the MDQ; 74 reported that a health professional had said that they had BD. The mean self-reported age of onset of any depressive or manic symptoms was 12.7 years (SD = 4.5 years). Twenty-seven individuals said they had bipolar I; 36 said they had bipolar II, 12 were not sure, and 11 did not answer the question. Approximately 40% of participants ( $n = 36$ ) reported currently receiving active pharmacotherapy for BD.

### Description of Yoga Practice

Participants had practiced yoga for an average of 5.9 years (SD = 6.0). They practiced yoga in class an

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average of 1.9 times per week (SD = 1.9) and at home an average of 3.3 times per week (SD = 2.6). The styles of yoga the respondents preferred are detailed in Table 1; the most common styles practiced were Hatha, Vinyasa, and Iyengar. Table 2 lists reasons respondents gave for practicing yoga.

### Benefits and Risks of Yoga

Table 3 describes responses to yes/no questions about whether there were benefits and risks associated with yoga. We conducted four chi-square tests to determine whether there was an association between responses to these four questions and self-reported lifetime impairment due to mania/ hypomania; none of these tests reached statistical significance.

### Qualitative Data Analysis

We summarize responses to each of the open-ended questions below.

#### ***What impact do you think yoga has on your life?***

Fifty-seven participants provided comments. We coded responses into 8 categories: *life-changing*, *cognitive effects*, *emotional effects*, *physical effects*, *spiritual effects*, *skills learned*, *social benefits*, and *less specific benefits*. The vast majority of responses were positive; we note all negative responses below. Fifteen individuals listed effects that were *life-changing* (all positive). Notable examples are: "It has changed my life forever. I will never be the same," "powerful," and "yoga has saved my life....I might not be alive today were it not for yoga." *Cognitive effects* ( $n = 20$  respondents) were primarily ones that might be considered under the rubric of increased mindfulness: ability to focus, acceptance, increased awareness, present-moment focus. Another cognitive effect was increased confidence. Twenty-nine individuals spoke of *emotional effects*. By far the most common was decreased anxiety or increased calm/relaxation. Others wrote about decreases in depression, and the ability to better regulate moods. Two people mentioned potential negatives: too many energizing breaths could leave one agitated and uncomfortable, and there could be an occasional exacerbation of depression symptoms. Respondents also wrote of *physical effects* ( $n = 19$  respondents). These included increased awareness of one's body, improved circulation, weight reduction, help with sleep, improved

**Table 1. Preferred styles of yoga reported by respondents ( $N = 86$ )**

<i>Style of yoga</i>	<i>n (%)</i>
Hatha	15 (17%)
Vinyasa	12 (14%)
All	4 (5%)
Iyengar	4 (5%)
Eclectic/mixed	3 (3%)
Gentle/beginner/basic	3 (3%)
Power	3 (3%)
Ananda	2 (2%)
Ashtanga	2 (2%)
Meditation	2 (2%)
Pranayama	2 (2%)
Relaxing/calming	2 (2%)
Yin	2 (2%)
Art of living	1 (1%)
Ashanti	1 (1%)
Babaji Kriya	1 (1%)
Bikram	1 (1%)
Kripalu	1 (1%)
Senior	1 (1%)
Sun salutations	1 (1%)

**Table 2. Reasons for practicing yoga ( $N = 86$ )**

<i>Reason</i>	<i>n (%)</i>
Exercise/improve flexibility	56 (65%)
Stress reduction or to reduce anxiety	56 (65%)
Increase happiness or joy	48 (56%)
Personal growth	41 (48%)
Reduce sadness	38 (44%)
Spiritual or religious reasons	37 (43%)
Improve sleep	30 (35%)
Reduce anger	28 (33%)
Social support	19 (22%)
Decrease excessive happiness or joy	11 (13%)

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**Table 3. Responses to questions regarding impact of yoga**

<i>Question</i>	<i>Yes n (%)</i>	<i>No n (%)</i>	<i>Sometimes n (%)</i>	<i>No response n (%)</i>
Do you think yoga has a positive impact on your depressive symptoms?	43 (50%)	5 (6%)	15 (17%)	23 (27%)
Do you think yoga can reduce manic or hypomanic symptoms?	38 (44%)	6 (7%)	19 (22%)	23 (27%)
Have you experienced any negative effects related to yoga?	22 (26%)	40 (46%)	---	24 (28%)
Has yoga ever had a negative impact on your bipolar disorder symptoms?	8 (9%)	54 (63%)	---	24 (28%)

health or fitness, and increased energy. One person said yoga helped him/her to manage his/her sex drive. Two people mentioned that pain could be a result of yoga participation if one were not careful. Three people spoke of *spiritual effects* (e.g., “allows me to tap into something bigger than myself”), 3 wrote about *skills learned* such as anxiety coping skills, 2 cited *social benefits* of going to class, and, within the *less specific benefits* category, 2 wrote of being more “grounded” and 5 wrote of being more “balanced.”

### ***How does yoga modify your depressive symptoms?***

Many responses were similar to those given for the previous question (i.e., the impact of yoga on life in general). We categorized responses as *cognitive effects*, *emotional effects*, *physical effects*, *social effects*, *behavioral effects*, *non-specific positive impact*, *no or negative impact*, and *specific aspects of practice helpful for depression*. With regard to *cognitive effects* ( $n = 24$  participants), in addition to changes related to mindfulness, participants mentioned that yoga helps distract them from negative thoughts, increases clarity, gives them a more positive perspective on life, and a sense of accomplishment, and that it can alleviate worry. One person said that “meditative time...can give you the focus to process what is at the root of a depressive episode.” *Emotional effects* ( $n = 21$  participants) on depression included the opportunity to observe and distance from emotions; decreased anger, sadness, and anxiety; more love; “releases built-up emotions;” and “reminds me that there can be happy moments.” One person mentioned that yoga can “stir up heavy emotions, intensify frustration.” With regard to *physical effects* ( $n = 10$ ), the primary effect mentioned was a

discussion of biochemical effects that yoga might have on endorphins or the parasympathetic nervous system. Two individuals spoke about *social effects*—connections with friends at class or with the yoga teacher. A new category of responses was *behavioral effects* ( $n = 8$ ). These comments referred primarily to behavior outside of yoga class—participants wrote that yoga helps them to get out of bed, “deters reclusive behavior;” or enables them to complete daily activities. Participants also wrote about the *non-specific positive impact* ( $n = 12$ ) of yoga, in which yoga might help prevent a depressive episode or alleviate depression symptoms. Four participants said that yoga had *no or negative impact*, and in particular did not help with severe depression. Finally, participants wrote about *specific aspects of practice helpful for depression*, including poses requiring deeper concentration and balance, breathing practice, more frequent practice, and particular wording that a teacher might use.

### ***How does yoga modify manic or hypomanic symptoms?***

We categorized responses as *slowing/calming*, *cognitive effects*, *emotional effects*, *physical effects*, *effects of breathing practices*, *grounding*, and *no effects or negative effects*. Many people spoke of yoga as being *slowing/calming* or noted that yoga “settled” them ( $n = 23$ ). This could be in reference to the mind (“helps slow my thoughts”), the body (“calms the nervous system”), or more generally (“usually is calming and relaxing”). In addition to calming the mind, other *cognitive effects* included focus, concentration, “mental balance,” and awareness as being helpful for preventing mania/hypomania or reducing symptoms. Twenty-five people mentioned positive cognitive effects. Five people

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mentioned *emotional effects* (not including calming and relaxing). These included a positive effect on irritability/anger, or heated yoga being “helpful in ‘sweating out’ (or so it feels) built up negative emotions.” Participants spoke of positive *physical effects* on manic/hypomanic symptoms ( $n = 11$ ), including calming effects, experiencing and focusing on one’s body, moderating heart rate, improvement in sleep, and decreased sex drive. Some participants ( $n = 8$ ) spoke of positive *effects of breathing practices* in helping them to calm, relax, or slow down. Four participants wrote that yoga was “grounding.” Finally, 4 participants wrote that yoga might have *no effects or negative effects* on mania/hypomania. Two participants said that yoga cannot be helpful when one is manic or hypomanic; others said that yoga could increase energy, and that one needed to be careful about breathing exercises.

***Have you experienced any negative effects related to yoga? Has yoga ever had a negative impact on your bipolar disorder symptoms?*** Twenty-two participants responded yes to the first question and 8 responded yes to the second. Negative impacts could be summarized in five categories: *increased agitation or relapse into mania, increased lethargy or depression symptoms, injury or increased pain, poor teaching, and opportunities for self-criticism*. With regard to *increased agitation or relapse into mania* ( $n = 5$  respondents), participants cited specific examples of rapid/energetic breathing practices making one feel too agitated, and a heated energetic yoga style potentially contributing to a transition from hypomania to mania. With regard to *increased lethargy or depression symptoms* ( $n = 5$  respondents), participants wrote about two ways this might occur. First, being too relaxed after class could lead to heavy sleep or in one case, “I became so relaxed, I fell into a relaxed state... near catatonic, as my mind was depressed already. I was in bed for three days afterward.” Second, a respondent stated “sometimes meditation leads me straight into rather than away from depressive thoughts.” Similarly, another respondent wrote that a potential negative effect of yoga was “a tendency to be stuck in my head, feeling of isolation, repeating negative mantras.” Eleven respondents wrote about the potential for *physical injury or increased pain*. Injury might result from doing postures that were too advanced. Pain could be result of pulled muscles or arthritis; one person, however, viewed some pain as

positive: “traveling aches... my body is physically changing to a healthy alignment.” Finally, one person wrote about taking a heated yoga class and having vomiting and diarrhea as a result. That respondent thought that the heat had reacted with aripiprazole. With regard to *poor teaching* ( $n = 2$ ), participants cited examples where this might increase the possibility for injury, or result in one feeling ashamed or stupid. Yoga could also provide *opportunities for self-criticism* ( $n = 4$ ). Respondents cited frustration with their own physical abilities, feeling inadequate compared to other students, and “feeling more depressed when I’m too depressed to actually do it.”

### DISCUSSION

We conducted this study in order to understand benefits and risks of yoga from the perspective of self-identified practitioners with BD. Given the information we gathered, it appears we were able to successfully recruit the desired population (i.e., individuals with bipolar I or bipolar II disorder who practice a type of hatha yoga). Our results suggest two overarching themes: hatha yoga may be a powerful positive practice for some people with bipolar disorder; and hatha yoga is not without risks, and, like many treatments for bipolar disorder, should be used with care.

There is clear evidence that yoga seems to be a powerful practice for some individuals with BD. It was striking that some of our respondents clearly believed that yoga had a major positive impact on their lives. Other respondents did not necessarily describe yoga as “life changing,” but did report positive effects. The most commonly reported positive effects were increased mindfulness—i.e., increased nonjudgmental focus on the present moment—and an increased sense of calm or relaxation. Yoga may also have an impact outside of the yoga class—several individuals wrote about how yoga helped them to accomplish basic daily activities. This is particularly important given that depression, with accompanying lack of motivation and withdrawal, is the predominant symptomatic expression of BD.<sup>1,2</sup> Many individuals who practiced yoga did so because it is a form of physical activity; this is also important given the documented side effects of weight gain in response to mood stabilizers and antipsychotic medications.<sup>34</sup> We note that, although yoga could have a positive impact, respondents disagreed about whether it

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could prevent or moderate symptoms, thus making it most appropriate as an adjunctive intervention.

However, yoga is not without risks, particularly for people with bipolar disorder. Extreme practices—rapid breathing, heated rooms, or very slow and meditative practice—may have a particular impact on individuals with BD. This is consistent with previous case studies and observations made in the literature on BD.<sup>27,28</sup> Given evidence for heat intolerance in people taking antipsychotic medication,<sup>35</sup> as well as concerns related to heat, dehydration, and subsequent risk for lithium toxicity,<sup>36</sup> hot yoga practices may present particular safety risks for people with bipolar disorder maintained on such widely used drug regimens.<sup>37</sup> Of course, individuals also run risks not specific to BD. Because yoga is a physical activity, there is a risk for physical injury, and, likely because it is often taught in group classes, there is a risk for self-criticism and comparison to others in the class.

This study represents a first step toward systematic study of yoga as an adjunctive intervention for individuals with BD. The data presented here should be interpreted in the context of the limitations of this study, which included the lack of a structured interview to confirm the BD diagnosis in study participants, reliance on the MDQ, which has been shown to be only moderately sensitive as a BD screening tool,<sup>38</sup> and the use of a solely qualitative assessment of yoga outcomes. An additional limitation was the use of a sample of current yoga practitioners who were likely dedicated to their yoga practice versus those who may not have tried yoga and/or who found it unhelpful or unappealing. However, we did recruit sufficient numbers to gain an understanding of potential benefits as well as potential risks of hatha yoga for BD, which was the primary goal of the study. These results suggest that the next step in this line of research, piloting a yoga intervention for bipolar disorder, is warranted. From a clinical perspective, patients (and their clinicians) may use the information we collected to decide whether to try community yoga for themselves, and, if so, what potential risks to watch for.

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