



Cultural Considerations When Treating Anxiety Disorders with Mindfulness-Based Interventions

Holly Hazlett-Stevens

Introduction

As the evidence base for mindfulness-based interventions (MBIs) grows, clinicians increasingly are turning to this approach to treat anxiety disorders and anxiety-related symptoms. Indeed, randomized controlled trials not only support the use of MBIs to alleviate anxiety and stress-related symptoms in medical populations, but MBIs have demonstrated effectiveness for diagnosed anxiety disorder clinical presentations as well. More and more patients seeking treatment for anxiety disorders in the USA are culturally, ethnically, and racially diverse, and while a growing body of research has identified important clinical considerations when serving diverse patients presenting with anxiety disorders, much of this research is limited to cognitive behavioral therapies (CBTs). Research addressing culturally sensitive mindfulness-based behavioral health care for anxiety disorders is sparse. This paucity of information is especially problematic because MBIs originated from ancient Buddhist meditation practices rooted in Eastern cultures, and it is unclear how culturally diverse individuals living in the West perceive secular mindfulness meditation instructions. The current chapter provides a brief overview of cultural considerations in the

assessment and treatment of anxiety in general, followed by an introduction to mindfulness intervention approaches and a review of clinical practices expected to maximize culturally sensitive delivery of MBIs among diverse individuals.

Cultural Aspects of Anxiety Disorders

Anxiety Disorders Among Latinx Individuals

Latinx Americans represent not only the largest but also the fastest-growing, ethnic minority group in the USA (U.S. Bureau of the Census, 2010). For this reason, clinical researchers increasingly have examined cultural influences on anxiety disorder symptom expression, diagnosis, and treatment outcomes while developing culturally sensitive treatment adaptation guidelines for Latinx patients. Although some epidemiological studies reported comparable prevalence rates of anxiety disorders between Latinx and non-Latinx White individuals (Kessler, Chiu, Demler, & Walters, 2005), Latinx individuals tend to report greater persistence in anxiety symptoms (Breslau, Kendler, Su, Aguilar-Gaxola, & Kessler, 2005) and more severe functional impairment from anxiety (Moitra et al., 2014). Furthermore, anxiety symptoms among Latinx individuals increase

H. Hazlett-Stevens (✉)
Department of Psychology, University of Nevada,
Reno, NV, USA
e-mail: hhazlett@unr.edu

with higher rates of acculturation (Alegría et al., 2008) and with greater acculturative stress and discrimination (Berkel et al., 2010; Finch, Kolody, & Vega, 2000). Latinx patients more often report somatic expressions of anxiety (Canino, Rubio-Stipec, Canino, & Escobar, 1992) and/or higher levels of somatization (Escobar, Gomez, & Tuason, 1983), which may reflect a common expression of emotional and social distress within one's cultural context (Kirmayer & Young, 1998). Culturally specific anxiety syndromes include *ataque de nervios* found in Puerto Rican and Dominican cultures, characterized by a dramatic increase in physiological arousal and negative affect in response to a significant stressor that often is accompanied by a fear that one might faint, may be dying, or will engage in destructive behavior due to a lack of control (Hofmann & Hinton, 2014).

Escobar et al. (2018) examined baseline data from a large ($N = 764$) clinical trial of adult primary care patients seeking treatment for anxiety disorders to determine how Latinx and non-Latinx White ethnic group differences, as well as within-group Latinx cultural variables, related to clinical characteristics. Although rates of anxiety disorder diagnosis, symptom severity levels, anxiety sensitivity, and mental functional impairment were comparable between the two ethnic groups, the Latinx group reported a higher average number of anxiety disorders, greater somatization, and increased physical functional impairment compared to the non-Latinx White group. Within the Latinx group, perceived discrimination was the only cultural variable that predicted mental health symptoms while controlling for other demographic variables. Importantly, this investigation was conducted in a primary care medical facility, the type of clinical setting in which Latinx patients most often seek mental health treatment (Vega & Lopez, 2001). When Latinx patients do seek such treatment, they tend to obtain mental health care in primary care medical clinics despite a lower likelihood to believe that mental health symptoms are biologically based and an increased likelihood of believing that counseling approaches are effective and preferable to medication (Givens, Houston, Van Voorhees, Ford, & Cooper, 2007).

The stigma of seeking help from a mental health professional (Azocar, Areán, Miranda, & Muñoz, 2001) is one possible reason that Latinx patients often prefer to seek such services from medical providers over mental health specialty providers or agencies (Vega, Kolody, & Aguilar-Gaxiola, 2001). Nevertheless, outside the clinical trials research context, Latinx individuals are less likely than their non-Latinx White counterparts to use mental health services (Alegría et al., 2002), and this disparity is further pronounced for less acculturated immigrants (Alegría et al., 2007).

A number of factors appear to contribute to the disparity in quality behavioral health care for anxiety disorders found between Latinx and non-Latinx White groups. Anxiety symptoms are less frequently detected among racial and ethnic minority primary care patients (Stockdale, Lagomasino, Siddique, McGuire, & Miranda, 2008), possibly due to:

1. a lack of culturally informed screenings (Barrios, Blackmore, & Chavira, 2016),
2. mismatches between DSM diagnostic criteria and culturally specific symptom expression compromising the validity of DSM diagnosis across cultures (Lewis-Fernández et al., 2010), and/or
3. perceptions of racial discrimination reducing patient willingness to endorse anxiety disorder symptoms (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010) and major depressive disorder and substance use disorder symptoms (Chou, Asnaani, & Hofmann, 2012).

Even when psychological disorders are diagnosed among Latinx individuals, evidence-based psychotherapies are less likely to be delivered (Stockdale et al., Young, Klap, Sherbourne, & Wells, 2001), and practical barriers to access such as the inability to secure time off work, lack of available time for therapy, the need for child-care, and inadequate transportation exist (see Barrios et al. for a review). In their review of this literature, Barrios et al. concluded that although Latinx individuals in the USA are at heightened risk for developing anxiety disorders and suffer poorer odds of receiving quality assessment and

treatment, evidence-based CBTs generally yield favorable outcomes for Latinx patients, especially when adaptations improve their engagement in mental health treatment.

Anxiety Across Other Cultures

Comparisons of anxiety disorder phenomena across other minority ethnic/racial and cultural groups also have been conducted. Asnaani et al. (2010) reported anxiety disorder prevalence rates within a large US sample of Latinx/Hispanic Americans ($N = 3615$), Asian Americans ($N = 1628$), African Americans ($N = 4598$), and White Americans ($N = 6870$). After controlling for other demographic variables, Asian Americans endorsed social anxiety disorder, generalized anxiety disorder, panic disorder, and post-traumatic stress disorder (PTSD) symptoms less frequently than all other ethnic/racial groups, and White Americans were more likely to endorse symptoms of social anxiety disorder, generalized anxiety disorder, and panic disorder than all three racial/ethnic minority groups. African Americans more frequently met diagnostic criteria for post-traumatic stress disorder when compared to White American, Latinx/Hispanic American, and Asian American groups. In their review of how cross-cultural factors influence anxiety symptom expression, Hofmann and Hinton (2014) found that cultural beliefs about the body's biology are sometimes associated with culture-specific syndromes. For example, Cambodian individuals may hold cultural beliefs that disturbed flow of an air-like substance in the body (termed "inner wind") causes a variety of somatic sensations such as gastrointestinal distress, muscle soreness, tinnitus, and/or numbness. Interpretation of these sensations as potentially catastrophic and capable of causing great bodily harm results in acute anxiety, fear, and symptoms of autonomic arousal. Hofmann and Hinton also identified how social contextual factors, such as individualism/collectivism, independent/interdependent self-construal, and gender role identification, may help explain culture-specific expressions of anxiety. One well-known example is *taijin kyofusho*, a form of social

anxiety found in Japanese and Korean cultures in which the individual is concerned about acting in a way that offends or embarrasses others instead of oneself.

A variety of effective evidence-based behavioral and cognitive-behavioral therapies for anxiety disorders exist, and early cross-cultural outcome research investigations supported the delivery of these treatments to ethnic/racial minority patients (Schraufnagel, Wagner, Miranda, & Roy-Byrne, 2006). A more recent comprehensive review of this literature (Carter, Mitchell, & Sbrocco, 2012) revealed that Latinx/Hispanic Americans and Asian Americans generally enjoyed favorable treatment outcomes for panic disorder and/or PTSD symptoms that tended to be equivalent across ethnic/racial groups. In their review of research conducted with African Americans specifically, Carter et al. found that exposure with response prevention for obsessive-compulsive disorder was effective for African American patients, who appeared to benefit from this treatment as much as European Americans. CBT was effective for African Americans with PTSD, with some studies showing that African American patients benefited equally when compared to European Americans. However, other PTSD studies found that: (1) European Americans improved slightly more than African Americans, (2) African Americans dropped out of treatment earlier, and (3) the matching of African American patients to European American therapists was associated with reduced treatment program participation. CBT for panic disorder also benefitted African American patients. However, results from reviewed studies also found that when compared to European American patients: (1) fewer African American patients were rated as improved after treatment, (2) African Americans were more symptomatic immediately after treatment and at follow-up, and (3) African Americans were less likely to report reductions in comorbid depression. Across ethnic/racial minority groups, Carter et al. also found evidence that cultural adaptations, such as ethnic matching of therapist and patient, use of interpreters with mental health experience, and delivering treatment in a familiar

nonmedical setting, benefitted patients. Carter et al. further recommended that treatments address any culture-specific experiences and/or beliefs of patients, such as prompting discussion of the experience of being African American in a predominantly European American workplace and addressing cultural beliefs that blocked wind causes somatic symptoms among Cambodian refugees. Other recommended cultural adaptations in the anxiety disorders treatment literature include: (1) adequately educating patients about the therapy process itself, (2) increased clinician sensitivity to issues of stigma as well as real and/or perceived discrimination, and (3) active problem solving to address practical barriers to access, such as childcare and transportation difficulties (Barrios et al., 2016). Hinton and Patel (2017) provided several detailed cultural adaptation strategies when treating anxious-depressive distress among ethnic/racial minority and refugee groups from a CBT perspective. They developed their culturally informed transdiagnostic model to help clinicians understand how symptoms of distress develop and are culturally shaped and to guide clinicians in culturally sensitive CBT treatment delivery.

Taken together, this preliminary work has begun to inform culturally sensitive assessment and treatment of anxiety disorders and anxiety-related distress across several racial, ethnic, and cultural groups of individuals. Much more research is needed to investigate both the effectiveness of standard treatment approaches among minority populations and the efficacy of cultural adaptations developed for specific groups of individuals. Not surprisingly, this research is limited to CBT approaches, the most prominent and widely studied treatment approach in the anxiety disorders literature. However, alternative intervention approaches incorporating mindfulness training have received increasing empirical support over recent years. MBIs may offer some advantages over traditional CBT approaches, including a transdiagnostic conceptual model, demonstrated efficacy to alleviate numerous comorbid medical and psychological symptoms, and reduced stigma resulting from a public health education delivery format (Hazlett-Stevens,

2018a). Practical benefits of the MBI approach stem from its short-term and time-limited curricula, easily delivered in medical settings due to the cross-diagnostic group session design. In this next section, the development of MBIs and the subsequent outcome research of MBIs for anxiety disorders are reviewed briefly.

Mindfulness-Based Interventions

Mindfulness-Based Stress Reduction (MBSR)

Mindfulness training first entered the realm of Western health care when Jon Kabat-Zinn developed mindfulness-based stress reduction (MBSR) at the University of Massachusetts (UMass) Medical School in 1979. Kabat-Zinn previously worked in his chosen field of molecular biology, conducting medical research at UMass as he studied and practiced Buddhist mindfulness meditation in his private life. As Kabat-Zinn observed hospital patients struggling with the stress of chronic illness and/or suffering negative health effects from stressful life circumstances, he developed an 8-week stress reduction course curriculum to teach patients mindfulness meditation practices in a secular format free from Buddhist terminology and rituals. In 1979, he left his medical research career to teach this stress reduction program to patients at the UMass Medical School. This stress reduction curriculum, which Kabat-Zinn eventually named MBSR, centered on cultivating *mindfulness*, defined by Kabat-Zinn as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment” (Kabat-Zinn, 2003, p. 145). The word *mindfulness* is an English translation of the ancient Asian Pali word *sati*, the original word used to capture this nonconceptual awareness of experience in Buddhist meditation traditions, and *sati* is considered essential for all forms of Buddhist meditation practice (Nyanaponika Thera, 1965). Kabat-Zinn developed MBSR to teach the intentional cultivation of mindfulness

from a universal perspective, viewing mindfulness as a fundamental human capacity that transcends all cultural and religious backgrounds. He therefore adapted several meditation practices he previously learned in formal Buddhist meditation training settings in such a way that meditation instructions are explained in simple and secular language while retaining the essence and integrity of the original practices (see Kabat-Zinn, 2003, 2005 for further descriptions of the development of MBSR).

MBSR involves 8 weekly class sessions, lasting 2.5–3 h each, and an all-day, 7-h, intensive silent meditation retreat held during the weekend of the sixth week (see Kabat-Zinn, 2013 for MBSR procedure descriptions). Weekly sessions begin with 45–90 min of instructor-guided formal mindfulness meditation practice, followed by group discussion of participant practice experiences and interactive presentation of didactic material. In addition, participants practice daily 40–60-min-long formal mindfulness meditation and/or movement home assignments with recorded instructions for guidance. Initial formal meditation practices include a body scan, in which participants move the focus of attention throughout each area of the body while lying still on their backs, and a formal sitting meditation practice introducing mindfulness of breathing instructions. Over the course of the MBSR curriculum, sitting meditation instructions gradually expand to body sensations, sounds, and thoughts and emotions. Eventually formal sitting meditation instructions include “choiceless awareness,” in which present-time experience itself becomes the object of attention and participants allow awareness of any sensory and mental experiences as they arise naturally during the meditation period. In addition, MBSR instructors teach mindfulness during movement with formal walking meditation instructions and gentle hatha yoga stretches. Throughout the 8-week curriculum, participants also engage informal practice assignments outside of class sessions, including mindfulness of eating, mindfulness of everyday activities, mindfulness of pleasant and of unpleasant events as they naturally occur during the day,

and eventually, mindfulness of stressful events as they occur in daily life. Participant experiences with these informal practices fuel class discussion of didactic material topics, such as how mindfulness contrasts with our default “automatic pilot” form of attention, the role of perception in stress, and models of stress reactivity compared to stress responding. As participants cultivate mindfulness through daily formal meditation/movement practices and increase mindful awareness over the course of daily living, they identify habitual patterns of stress reactivity across various situations. This process enables participants to circumvent old reactive habit patterns whenever mindful awareness allows for more skillful and thoughtful responding.

Early outcome research conducted in Kabat-Zinn’s UMass Stress Reduction Clinic supported the use of MBSR for improving the management of chronic pain (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth, & Burney, 1985). As word spread anecdotally about the benefits of MBSR for medical patients, other clinicians received training in MBSR instruction and conducted randomized controlled trials. Eventually MBSR gained substantial empirical support for the alleviation of perceived stress and symptoms of distress associated with chronic pain, cancer, and other medical conditions (see meta-analytic reviews by Bohlmeijer, Prenger, Taal, & Cuijpers, 2010; de Vibe, Bjørndal, Tipton, Hammerstrøm, & Kowalski, 2012). Another meta-analysis revealed that MBSR consistently reduced symptoms of anxiety and depression across individuals with various medical and psychiatric conditions (Hofmann, Sawyer, Witt, & Oh, 2010). In one large randomized controlled trial (Biegel, Brown, Shaprio, & Schubert, 2009), 102 adolescent psychiatric outpatients received either MBSR coupled with mental health treatment as usual or mental health treatment as usual only. Outpatients who received MBSR reported reduced symptoms of anxiety, depression, somatic distress, and sleep disturbance significantly more than psychiatric treatment-as-usual control group patients did.

MBSR and Anxiety Disorders

MBSR holds promise for anxiety disorder patients in particular. In an early uncontrolled study from the original UMass Stress Reduction Clinic (Kabat-Zinn, Massion, Kristeller, & Peterson, 1992), MBSR participants who initially screened positive for generalized anxiety disorder (GAD) and/or panic disorder reported significant reductions in general anxiety symptoms following MBSR. Acute anxiety symptoms, as commonly measured in clinical panic disorder research with the Beck Anxiety Inventory, the Fear Survey Schedule, and the Mobility Inventory for Agoraphobia, also reduced. These same participants reported continued anxiety symptom improvement 3 years later (Miller, Fletcher, & Kabat-Zinn, 1995). Since then, subsequent randomized controlled trials conducted specifically with individuals seeking treatment for anxiety disorder symptoms have established the effectiveness of MBSR for clinical anxiety disorders. In a mixed clinical sample with diagnoses of social anxiety disorder, GAD, and/or panic disorder (Vøllestad, Sivertsen, & Nielsen, 2011), participants randomized to MBSR reported significant trans-diagnostic anxiety symptom reduction, as well as reduced depression and insomnia, when compared to a wait-list control group. Another randomized investigation included a mixed anxiety disorder sample of veteran patients who received a principal diagnosis of panic disorder (with or without agoraphobia), GAD, social anxiety disorder, obsessive-compulsive disorder, or civilian PTSD (Arch et al., 2013). Veterans were randomized to a modified MBSR protocol consisting of 10 weekly 1.5-h sessions with a 3-h retreat or to a 10-session group-administered CBT in which therapy components could be tailored to individual patients' specific anxiety disorders. Both modified MBSR and group-administered CBT significantly reduced clinician-rated diagnostic severity of the principal anxiety disorder through 3-month follow-up, with no significant differences between the two groups. However, results involving self-report measures revealed that group-administered CBT led to greater reductions in anxious arousal

at follow-up than modified MBSR, while modified MBSR led to greater reductions in worry and comorbid emotional disorders compared to group-administered CBT. Arch et al. also found evidence of equivalent treatment credibility between the two interventions, as well as equivalent therapist adherence and competency.

Randomized controlled trials have been conducted with clinical samples diagnosed with specific anxiety disorders as well. Participants diagnosed as GAD following structured clinical interviews received MBSR or an active stress management control intervention (Hoge et al., 2013). The GAD patient group randomized to MBSR yielded greater clinical improvements on clinical severity and improvement clinician ratings and self-reported anxiety measures than the active control group post-intervention, despite comparable reductions in Hamilton Anxiety Scale symptom ratings. In the laboratory, the MBSR patients reported greater reductions in subjective anxiety and distress and increased positive self-statements in response to a social stress challenge task when compared to the active stress management control group. Subsequent uncontrolled research reported significant clinical GAD symptom improvement following MBSR in severe cases, finding that these clinical benefits were not limited to patients reporting only mild or moderate GAD symptoms (Hazlett-Stevens, 2018b). Furthermore, the substantial GAD symptom reduction reported in controlled MBSR outcome research has been documented outside the controlled research context, in which MBSR was delivered as originally designed—that is, to large and diagnostically heterogeneous patient groups in a general hospital setting (Hazlett-Stevens, 2018a).

Participants diagnosed with social anxiety disorder and randomized to MBSR or to an aerobic exercise regimen reported significant and equivalent reductions in social anxiety and depression and increased well-being when compared to an untreated group, immediately after intervention and 3 months later (Jazaieri, Goldin, Werner, Ziv, & Gross, 2012). Despite equivalent outcomes on symptom measures, participants who received MBSR exhibited

decreased negative self-views and increased neural responses in posterior cingulate cortex areas when compared to the aerobic exercise group (Goldin, Ziv, Jazaieri, Hahn, & Gross, 2013). In a subsequent trial, social anxiety disorder individuals were randomized to MBSR, cognitive-behavioral group therapy (CBGT), or wait-list control groups (Goldin et al., 2016). Both MBSR and CBGT produced significant and similar immediate improvements in social anxiety symptoms and related clinical measures compared to the wait-list group, although the different interventions impacted some of the specific psychological process measures differentially in expected ways. Importantly, treatment gains maintained for both intervention groups 1 year later. MBSR therefore may yield social anxiety disorder symptom improvements equivalent to the gold standard CBGT approach, although a previous comparison of MBSR to CBGT demonstrated some additional potential benefits of CBGT (Koszycki, Benger, Shlik, & Bradwejn, 2007). Individuals suffering from PTSD also may benefit from MBSR. Veterans with PTSD randomized to MBSR reported greater improvements in PTSD symptom severity during treatment and at 2-month follow-up than veterans with PTSD randomized to an active control present-centered group therapy (Polusny et al., 2015).

In sum, the demonstrated benefits of MBSR for anxiety disorder symptom reduction appear more than mere attention placebo effects, and MBSR effects do not simply reflect the general effects of standard stress management education or exercise. MBSR may be comparable to gold standard CBT protocols, although more research is needed to draw this conclusion. MBSR also has the potential to increase dispositional mindfulness, personal growth, life satisfaction, and improved quality of life, thereby enhancing personal growth and quality of life beyond anxiety disorder symptom reduction alone (Hazlett-Stevens, 2018c). Not surprisingly, MBSR appears in the Substance and Mental Health Services Administration (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP).

Mindfulness-Based Cognitive Therapy (MBCT) and Other MBI Protocols

In the 1990s, another MBI gained attention in clinical psychology circles as well. Cognitive therapy researchers Zindel Segal, Mark Williams, and John Teasdale adapted the original MBSR curriculum by integrating elements of cognitive therapy and psychoeducation about depression. They developed this mindfulness-based cognitive therapy protocol (MBCT; Segal, Williams, & Teasdale, 2013) for the specific purpose of preventing future relapse among individuals recovered from recurrent major depressive episodes. While maintaining the overall group session structure and mindfulness practices of MBSR, MBCT targets specific topics such as the self-referential nature of thoughts, the role of automatic thought patterns of rumination in the development of depression, how cognitive bias toward negative interpretations impacts emotion, and how mood influences thoughts and behavior. MBCT participants also learn a specific informal mindfulness practice, the “3-minute breathing space,” for use in daily life: throughout the day, they are encouraged to step out of “automatic pilot” mode deliberately by bringing attention to the breath and then expanding attention to full present-moment experience.

MBCT has become a leading evidence-based group therapy approach in the treatment of depression. In early randomized controlled clinical trials, MBCT significantly reduced the risk of subsequent depressive relapse among patients with three or more previous depressive episodes when compared to treatment as usual (Ma & Teasdale, 2004; Teasdale et al., 2000). A subsequent meta-analysis found that MBCT significantly reduced the risk of depressive relapse by 35% overall, and risk reduced by 44% among patients with three or more past episodes (Piet & Hougaard, 2011). MBCT also appears effective among anxiety disorder clinical samples. Anxiety and comorbid depression symptoms reduced following MBCT among participants diagnosed with generalized anxiety disorder (Craigie, Rees, & Marsh, 2008; Evans et al., 2008) and/or panic

disorder (Kim et al., 2009, 2010) as well as social anxiety disorder (Piet, Hougaard, Hecksher, & Rosenberg, 2010). The UK's National Institute for Health and Clinical Excellence (NICE) has endorsed MBCT as an evidence-based therapy.

Other adaptations of the original MBSR protocol have emerged in the clinical psychology field. Some protocols targeted clinical problems other than anxiety disorders, such as eating disorders (mindfulness-based eating awareness therapy, MB-EAT; Kristeller, Baer, & Quillian-Wolever, 2006) and substance use (mindfulness-based relapse prevention, MBRP; Witkeiwitz, Marlatt, & Walker, 2005). However, some promising MBIs were tailored specifically for PTSD, such as mindfulness-based exposure therapy (MBET) developed for veterans (King et al., 2016) and trauma-informed mindfulness-based stress reduction (TI-MBSR) developed for survivors of childhood sexual and physical abuse and/or intimate partner violence in adulthood (Kelly & Garland, 2016). In addition, newer individual psychotherapies for anxiety disorders, such as the acceptance-based behavior therapy for GAD developed by Roemer and Orsillo (2014), have mindfulness practices integrated into their protocols.

To conclude, MBSR, MBCT, and other MBIs appear to be promising alternatives to CBT in the alleviation of anxiety disorder symptoms. Importantly, however, it is unclear how well the controlled research establishing the effectiveness of these MBIs for anxiety disorders generalizes to individuals from diverse backgrounds—the clinical trials described above lacked significant inclusion of ethnically and racially diverse individuals. In some cases, participant samples were described as 70–88% non-Hispanic White (Arch et al., 2013; Hoge et al., 2013; Polusny et al., 2015) or were approximately 40% non-Hispanic White and approximately 40% Asian American (Goldin et al., 2016; Jazaieri et al., 2012). Other trials were conducted outside the USA in Denmark (Piet et al., 2010), Norway (Vøllestad et al., 2011), and South Korea (Kim et al., 2009) and, therefore, did not report the ethnic or racial background of participants. As MBIs become increasingly available to diverse patients seeking

help for anxiety disorder symptoms in the USA, research including ethnically, racially, and culturally diverse clinical samples is needed to represent the diverse US population adequately. Furthermore, research addressing the acceptability and culturally sensitive delivery of MBIs when provided to minority groups is imperative, as is research examining the effectiveness of culturally adapted MBI protocols. Although this work has not yet appeared within the field of anxiety disorders, MBI clinical researchers working with other patient populations have begun to address these important empirical questions. This next section reviews the emerging literature informing culturally competent delivery of MBIs.

Mindfulness-Based Interventions: Cultural Considerations

Implementing MBSR in Diverse Communities

Individuals from ethnic, racial, and cultural minority backgrounds are underrepresented in MBI clinical trials, just as these groups are understudied in other evidence-based treatment research. DeLuca, Kelman, and Waelde (2018) further attributed this lack of diversity research to the Buddhist origins of MBIs. Because this intervention approach is grounded in a Buddhist conceptual perspective that emphasizes the universality of human experience over individual differences, MBI researchers might be less inclined to investigate the role of diversity factors. In addition, knowledge of MBI Buddhist origins may cause individuals from diverse backgrounds concern that the meditation practices taught in MBIs conflict with their non-Buddhist religious or spiritual beliefs. Indeed, lower levels of engagement in mindfulness practice were documented among ethnoracial minority groups (Olano et al., 2015). However, it remains unclear whether this disparity is due to reduced availability of MBIs stemming from the lack of effectiveness research conducted with diverse individuals or whether MBIs simply appear less acceptable to diverse groups of individuals. Nevertheless,

two MBSR programs implemented in US inner-city health clinic settings have begun to explore questions of acceptability and effectiveness of MBSR within diverse communities.

In 1992, Jon Kabat-Zinn and others from UMass Medical School established a satellite MBSR program in a Worcester inner-city neighborhood health clinic to test the feasibility and acceptability of MBSR among this underserved and diverse patient population (Kabat-Zinn et al., 2016). In contrast to the original UMass program that served predominantly White middle- and working-class patients, many inner-city clinic patients were Latinx, African American, Native American, or recent immigrants from various world regions. Over 60% of the inner-city program patients received government assistance, and only 20% were employed. Of the Latinx Spanish-speaking MBSR participants, 88% had an annual income below \$15,000, as did 72% of English-speaking MBSR participants. Patients either were provider-referred or self-referred to improve coping with stress, pain, illness, anxiety, and/or depression, and many patients presented with a wide variety of medical diagnoses (e.g., cardiovascular conditions, asthma, cancer, chronic fatigue, fibromyalgia, HIV/AIDS) and/or psychiatric diagnoses (e.g., depression, anxiety, PTSD, insomnia, complicated bereavement, substance abuse recovery). Several accommodations were made in an attempt to meet the needs of inner-city patients and reduce barriers to access: (1) Clinic patients attended the MBSR program free of charge. (2) Onsite childcare was provided at no cost. (3) Free transportation was arranged. (4) MBSR was offered in both Spanish and English. (5) The timing of classes was scheduled to accommodate specific patient needs, such as coordinating morning class times with the local school bus schedule to maximize single parent attendance or offering evening classes for working MBSR participants. Over the course of 7 years, 538 patients completed the MBSR program (65% completion rate), and 452 patients completed MBSR during their first attempted cycle. Significant and comparable improvements for both English-class and Spanish-class MBSR groups were found across outcome measures of

medical symptoms, health and functioning, and clinical anxiety. A small subset of participants who were willing to complete follow-up measures reported that these improvements continued up to 7 years later. Kabat-Zinn and colleagues concluded that MBSR can be delivered feasibly and effectively within a multiethnic and multicultural low-income inner-city community, observing that the mindfulness practices were culturally acceptable in this ethnically diverse population with no prior exposure to meditation methods.

In 1993, Beth Roth and colleagues implemented the MBSR curriculum within the inner-city nonprofit Community Health Center in Meriden, CT. By 1997, approximately 200 clinic patients with heterogeneous medical and psychiatric diagnoses completed this bilingual MBSR program, many of whom anecdotally reported significant personal change, symptom relief, and improved health (Roth, 1997). To meet the needs of this low-income patient population—78% of clinic patients received public assistance—the clinic bills the cost of the MBSR program to patients' health insurance whenever possible, uninsured patients pay a sliding scale fee, and no patient is denied MBSR for financial reasons. In an open design clinical trial (Roth & Creaser, 1997), significant improvements on standardized medical and psychological symptom measures, including self-esteem, were documented following MBSR for the 79 study participants who completed the MBSR program (60% completion rate). Given that the majority of patients served by the Community Health Center are Latinx, MBSR was offered in Spanish as well as English. Of these 79 study participants, 51 (65%) received MBSR in Spanish and 28 (35%) in English. A chart review examining health-care utilization for a subset of Community Health Center patients who completed MBSR also revealed a significant decrease in the number of chronic care medical visits following MBSR (Roth & Stanley, 2002). Thus, MBSR may help reduce health-care costs by decreasing utilization. In a subsequent non-randomized controlled trial (Roth & Robbins, 2004), 48 Spanish-speaking and 20 English-speaking patients who received MBSR were compared to a control group of 18

Spanish-speaking patients who did not receive MBSR due to practical constraints. Before intervention delivery, the number of medical and mental health diagnoses between these two groups did not differ, and no differences were found between the Spanish- or English-speaking intervention groups beforehand. A total of 68 patients completed MBSR (66% completion rate) and provided complete data for analysis. The MBSR group reported statistically significant improvements on five of eight general health and social functioning measures when compared to the control group. While preliminary, results from the Community Health Center studies suggested that MBSR feasibly can be delivered in both Spanish and English to diverse inner-city clinic patients in an acceptable and effective manner. If available, this option might be especially beneficial to Latinx patients suffering from anxiety disorder symptoms because MBSR is delivered within the general health-care setting and is presented as a public health education class. Thus, MBSR can be delivered in the very setting Latinx patients are most likely to seek help for anxiety, and the transdiagnostic stress reduction class format may appear less stigmatizing than mental health specialty care.

Just as Kabat-Zinn et al. (2016) argued for the necessity of addressing practical barriers to MBSR attendance among inner-city clinic patients, Roth and Creaser (1997) identified specific agency policies needed to maximize MBSR program access and minimize attrition. Clinics are advised to offer MBSR in each patient's preferred language whenever possible, to address issues of cost (including the cost of purchasing devices to listen to meditation recordings), and to provide childcare, transportation, reminder calls during the first few weeks, and flexible scheduling as much as possible. Furthermore, culturally sensitive delivery of MBSR in multicultural inner-city settings requires that MBSR instructors have the flexibility to alter course content and structure in creative ways that reflect the life experience of participants. For example, Latinx patients may find the mindfulness meditation and movement practices quite strange at first, yet instructors can avoid the word *yoga* and its poten-

tial negative connotations by referring to mindful stretches and postures as "body movements" (*movimientos del cuerpo*, in Spanish) or "gentle stretches" (*estiramientos suaves*, in Spanish) instead (Roth & Creaser). For further description of culturally sensitive MBSR delivery, see Roth and Calle-Mesa (2006) for a detailed case study of a Spanish-speaking Puerto Rican man who attended the Community Health Center MBSR program for severe chronic pain, depression, anxiety, and poor self-esteem and subsequently reported profound clinically significant benefits from the program. Roth and Creaser further suggested that other inner-city MBSR programs be implemented within established health-care centers or agencies already utilized and trusted by patients in that community. Lastly, agency administrators, providers, and staff also must support the MBSR program to ensure successful implementation.

Effectiveness of MBIs Among Diverse Populations

In addition to the establishment of these two US inner-city MBSR programs, a growing research effort has examined the effectiveness of various MBIs among individuals from diverse backgrounds. One meta-analysis examined outcome investigations of similar psychotherapies (e.g., dialectical behavior therapy, DBT) in addition to MBSR and MBCT (Fuchs, Lee, Roemer, & Orsillo, 2013). Only studies that specifically recruited individuals from marginalized backgrounds, including non-White and/or non-European American ethnic or cultural background, older adults, nonheterosexual, low-income, physically disabled, incarcerated, and/or participants whose first language was other than the dominant culture, were selected. Three of the included investigations in this meta-analysis were MBI trials conducted with ethnic, racial, or cultural minority participants, and one of these studies was the MBSR trial conducted by Roth and Robbins (2004) described above (Hedges' *g* effect size of 0.67). In another of these studies (Garland, Gaylord, Boettiger, & Howard, 2010),

participants were recruited from an urban US community, resulting in a clinical sample of predominantly male (79%), African American (60%), and low-income (almost 53% earned less than \$20,000 annually) alcohol-dependent adults. The MBCT protocol adapted for alcohol dependence outperformed a support group control intervention (Hedges' $g = 0.43$) in this randomized trial. The final study identified by Fuchs et al. (Semple, Lee, Rosa, & Miller, 2010) randomized 25 children, mostly from low-income, inner-city households, to MBCT adapted for children or to a wait-list control group. Of the 25 children participating, 15 identified as Latinx, 6 as African American, and 4 as Caucasian. Participants who completed the MBCT program showed greater improvements in attention problems compared to the control group, both immediately post-intervention (Hedges' $g = 0.43$) and at 3-month follow-up. Children with clinically elevated anxiety before MBCT also demonstrated significant reductions in anxiety symptoms and behavior problems following the intervention.

More recently, DeLuca et al. (2018) conducted a systematic review of MBI studies conducted with ethnoracial minority representation or examining cultural adaptations of MBIs. They identified 24 investigations in which at least 75% of the sample included ethnoracial minority individuals, the investigation tested a culturally adapted MBI, or the effectiveness of the MBI was compared between different ethnoracial groups. Of the 24 studies meeting at least one of these selection criteria, 11 used single-sample open trial designs and 13 were randomized controlled trials. Of the 13 randomized trials, seven evaluated the effects of MBIs on health or mental health conditions, although none of these studies required a specific diagnosis for inclusion. The remaining six randomized trials studied children or youth samples in the absence of diagnostic inclusion criteria. Cohen's d effect sizes across dependent measures varied greatly, ranging from 0.10 to 0.62 for single-sample studies and from 0.02 to 0.99 for randomized trials. Hispanic/Latinx and African American individuals were most represented in this research literature, although all major US ethnoracial minority

groups were included in at least one study with the exception of Native Alaskans. MBSR was the most common MBI studied (29%), and the MBCT for children study described above (Semple et al., 2010) was the only MBCT study identified. Other MBI protocols targeted conditions such as substance abuse or pregnancy or were developed to promote health and well-being among children in schools. Only one investigation compared intervention effectiveness across ethnoracial groups (Witkiewitz, Greenfield, & Bowen, 2013). In this last investigation, racial and ethnic minority women enrolled in a residential addiction treatment program and randomized to MBRP reported no drug use days and lower addiction severity at 15-week follow-up when compared to a standard relapse prevention group. Regression analyses revealed that the benefit of MBRP over standard relapse prevention was more pronounced for racial and ethnic minority participants versus non-Hispanic White participants. Witkiewitz et al. proposed that the highly individualized and experiential nature of MBSR might have increased its cultural relevance for racial and ethnic minority participants, whereas the standard relapse prevention program employed a more didactic format to teach universal coping strategies.

Cultural Adaptations of MBIs

Each of the MBI research investigations described thus far delivered an MBI originally tested with predominantly White participant samples (e.g., MBSR, MBCT, MBRP). When subsequently delivered to diverse individuals, these protocols often were modified to overcome practical barriers to access, such as reducing session length or providing the MBI in an alternative language. Additionally, investigators aimed to deliver the MBI in culturally sensitive ways to improve acceptability while maintaining the core curriculum of the MBI. In contrast, another approach to culturally sensitive MBI delivery involves creating an entirely new culturally adapted intervention developed from within the specific culture of interest. Proulx et al. (2018) argued for this

alternative approach out of concern that well-intentioned mindfulness instructors may engage cultural minority participants in unrecognized biased ways, thereby preventing these participants from fully engaging the mindfulness program. Subtle MBI instructor behaviors involving how participants are addressed, instructor use of language, and/or the selection of teaching metaphors or stories described, although unintentional, could appear unsupportive of participants' cultural framework. Without awareness, MBI instructors might convey that they are encouraging American minority communities to become more like White American communities and therefore are not interested in how spiritual traditions within the culture resonate with mindfulness instructions. Proulx et al. also observed that minority community members often experience an additional burden of having to reinterpret intervention material into their own cultural framework, ironically placing an extra layer of stress onto their stress reduction class attendance. Proulx et al. therefore proposed that MBI researchers adopt a community-based participatory research (CBPR) approach in which researchers first engage the community of interest to learn about future participants' cultural perspectives beforehand, ensuring a more culturally responsive MBI research program.

Proulx et al. (2018) emphasized the importance of MBI researchers engaging the American minority community of interest by reaching out to leaders within that community first. Researchers must be careful to build trust with community leaders and members as they seek to understand the community's particular concerns, needs, and perspectives and convey a genuine intention to develop a mindfulness intervention that identifies and enhances cultural strengths. For example, researchers engaging African American communities must acknowledge America's long history in which physicians knowingly harmed African Americans, creating profound mistrust of medical establishments. Proulx et al. further argued that researchers must remain open to each community's particular cultural perspectives and be willing to fit their intervention approach to the culture of that specific

population. One cited example described how mindfulness meditation could be adapted for a community of African American adults to be compatible with biblical principles: Woods-Giscombé and Gaylord (2014) noted similarities between the cultural practice of prayer to try "to listen to what God is telling you" and the emphasis on stillness and present-moment awareness in mindfulness meditation. Another example involving Native American communities incorporated material from native storytellers to convey how mindfulness could be practiced as a means of developing careful attention (Le & Gobert, 2015). In a final example, a culturally adapted mindfulness intervention for mixed ethnic Native Hawaiian/Pacific Islander incarcerated youth incorporated symbolic and spiritual meanings of the words *aloha* and *mahalo* throughout the mindfulness curriculum (Le & Proulx, 2015). From this CBPR perspective, a member from within a given minority community should play a leadership role in developing the MBI from within that cultural context whenever possible (Proulx et al.).

Summary and Conclusions

Individuals from minority cultures often experience increased psychosocial stress resulting from discrimination and microaggressions, and inner-city communities are challenged by the stress of poverty—MBIs targeting stress reactivity therefore might be especially beneficial to diverse communities for these reasons (Kabat-Zinn et al., 2016; Proulx et al., 2018). However, the documented mental health-care disparities found with other evidence-based interventions appear pronounced for MBIs, possibly in part due to their Buddhist origins. MBIs might offer an optimal intervention approach for minority individuals seeking to alleviate clinical anxiety because: (1) MBSR is delivered within the medical setting context where many patients first seek help for anxiety, (2) MBSR involves a health education class format that avoids the stigma of mental health specialty care, and (3) various MBIs have demonstrated effectiveness to reduce clinical

anxiety disorder symptoms. Unfortunately, research to date has not examined the efficacy of MBIs specifically for anxiety disorders among diverse populations. MBSR does appear to be an acceptable and effective intervention when delivered within culturally diverse and low-income US communities (e.g., Kabat-Zinn et al., 2016; Roth & Robbins, 2004), and other MBIs show promise when delivered to diverse populations as well (DeLuca et al., 2018). Nevertheless, much more research utilizing rigorous randomized controlled designs with diverse participant samples is required. Important empirical questions remain regarding how to improve MBI session attendance while ensuring culturally sensitive delivery within diverse communities. Some cultural groups might be best served by novel MBI curricula developed from within their given culture before examining intervention effectiveness within that cultural context. However, empirical work in this area has only just begun.

References

- Alegría, M., Canino, G., Rios, R., Vera, M., Calderon, J., Rusch, D., & Ortega, A. N. (2002). Inequalities in use of specialty mental health services among Latinos, African Americans, and non-Latino whites. *Psychiatric Services, 53*(12), 1547–1555. <https://doi.org/10.1176/appi.ps.53.12.1547>
- Alegría, M., Canino, G., Shrout, P. E., Woo, M., Duan, N., Vila, D., ... Meng, X. L. (2008). Prevalence of mental illness in immigrant and non-immigrant U.S. Latino groups. *American Journal of Psychiatry, 165*(3), 359–369. <https://doi.org/10.1176/appi.ajp.2007.07040704>
- Alegría, M., Mulvaney-Day, N., Woo, M., Torres, M., Gao, S., & Oddo, V. (2007). Correlates of past-year mental health service use among Latinos: Results from the national Latino and Asian American study. *American Journal of Public Health, 97*(1), 76–83. <https://doi.org/10.2105/Ajph.2006.087197>
- Arch, J. J., Ayers, C. R., Baker, A., Almklov, E., Dean, D. J., & Craske, M. G. (2013). Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavioral therapy for heterogeneous anxiety disorders. *Behaviour Research and Therapy, 51*, 185–196.
- Asnaani, A., Richey, J. A., Dimaite, R., Hinton, D. E., & Hofmann, S. G. (2010). A cross-ethnic comparison of lifetime prevalence rates of anxiety disorders. *Journal of Nervous and Mental Disease, 198*(8), 551–555. <https://doi.org/10.1097/NMD.0b013e3181ea169f>
- Azocar, F., Areán, P., Miranda, J., & Muñoz, R. F. (2001). Differential item functioning in a Spanish translation of the Beck depression inventory. *Journal of Clinical Psychology, 57*(3), 355–365. <https://doi.org/10.1002/jclp.1017>
- Barrios, V., Blackmore, M., & Chavira, D. (2016). Using integrated care to treat anxiety among Latino populations. In L. T. Benuto & W. O'Donohue (Eds.), *Enhancing behavioral health in Latino populations* (pp. 187–205). Basel, Switzerland: Springer.
- Berkel, C., Knight, G. P., Zeiders, K. H., Tein, J. Y., Roosa, M. W., Gonzales, N. A., & Saenz, D. (2010). Discrimination and adjustment for Mexican American adolescents: A prospective examination of the benefits of culturally related values. *Journal of Research on Adolescence, 20*(4), 893–915. <https://doi.org/10.1111/j.1532-7795.2010.00668.x>
- Biegel, G. M., Brown, K. W., Shapiro, S. L., & Schubert, C. M. (2009). Mindfulness-based stress reduction for the treatment of adolescent psychiatric outpatients: A randomized clinical trial. *Journal of Consulting and Clinical Psychology, 77*, 855–866.
- Bohlmeijer, E., Prenger, R., Taal, E., & Cuijpers, P. (2010). The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. *Journal of Psychosomatic Research, 68*, 539–544.
- Breslau, J., Kendler, K. S., Su, M., Aguilar-Gaxola, S., & Kessler, R. C. (2005). Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychological Medicine, 35*(5), 317–327. <https://doi.org/10.1017/S0033291705004782>
- Canino, I. A., Rubio-Stipec, M., Canino, G. J., & Escobar, J. I. (1992). Functional somatic symptoms: A cross-ethnic comparison. *American Journal of Orthopsychiatry, 62*(4), 605–612. <https://doi.org/10.1037/h0079376>
- Carter, M. M., Mitchell, F. E., & Sbrococo, T. (2012). Treating ethnic minority adults with anxiety disorders: Current status and future recommendations. *Journal of Anxiety Disorders, 26*(4), 488–501. <https://doi.org/10.1016/j.janxdis.2012.02.002>
- Chou, T., Asnaani, A., & Hofmann, S. G. (2012). Perception of racial discrimination and psychopathology across three U.S. ethnic minority groups. *Cultural Diversity Ethnic Minority Psychology, 18*(1), 74–81. <https://doi.org/10.1037/a0025432>
- Craigie, M. A., Rees, C. S., & Marsh, A. (2008). Mindfulness-based cognitive therapy for generalized anxiety disorder: A preliminary evaluation. *Behavioural and Cognitive Psychotherapy, 36*, 553–568.
- de Vibe, M., Bjørndal, A., Tipton, E., Hammerstrøm, K., & Kowalski, K. (2012). Mindfulness-based stress reduction (MBSR) for improving health, quality of life, and social functioning in adults. *Campbell Systematic Reviews, 3*, 127.
- DeLuca, S. M., Kelman, A. R., & Waelde, L. C. (2018). A systematic review of ethnoracial representation and cultural adaptation of mindfulness- and

- meditation-based interventions. *Psychological Studies*, 63, 117–129.
- Escobar, J. I., Gomez, J., & Tuason, V. B. (1983). Depressive phenomenology in north and south American patients. *The American Journal of Psychiatry*, 140(1), 47–51.
- Escovar, E. L., Craske, M., Roy-Byrne, P., Stein, M. B., Sullivan, G., Sherbourne, C. D., ... Chavira, D. A. (2018). Cultural influences on mental health symptoms in a primary care sample of Latinx patients. *Journal of Anxiety Disorders*, 55, 39–47. <https://doi.org/10.1016/j.janxdis.2018.03.005>
- Evans, S., Ferrando, S., Findler, M., Stowell, C., Smart, C., & Haglin, D. (2008). Mindfulness-based cognitive therapy for generalized anxiety disorder. *Journal of Anxiety Disorders*, 22, 716–721.
- Finch, B. K., Kolody, B., & Vega, W. A. (2000). Perceived discrimination and depression among Mexican-origin adults in California. *Journal of Health and Social Behavior*, 41(3), 295–313. <https://doi.org/10.2307/2676322>
- Fuchs, C., Lee, J. K., Roemer, L., & Orsillo, S. M. (2013). Using mindfulness- and acceptance-based treatments with clients from nondominant cultural and/or marginalized backgrounds: Clinical considerations, meta-analysis findings, and introduction to the special series: Clinical considerations in using acceptance- and mindfulness-based treatments with diverse populations. *Cognitive and Behavioral Practice*, 20, 1–12.
- Garland, E. L., Gaylord, S. A., Boettiger, C. A., & Howard, M. O. (2010). Mindfulness training modifies cognitive, affective, and physiological mechanisms implicated in alcohol dependence: Results of a randomized controlled pilot trial. *Journal of Psychoactive Drugs*, 42, 177–192.
- Givens, J. L., Houston, T. K., Van Voorhees, B. W., Ford, D. E., & Cooper, L. A. (2007). Ethnicity and preferences for depression treatment. *General Hospital Psychiatry*, 29(3), 182–191. <https://doi.org/10.1016/j.genhosppsych.2006.11.002>
- Goldin, P. R., Morrison, A., Jazaieri, H., Brozovich, F., Heimberg, R., & Gross, J. J. (2016). Group CBT versus MBSR for social anxiety disorder: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 84, 427–437. <https://doi.org/10.1037/ccp0000092>
- Goldin, P., Ziv, M., Jazaieri, H., Hahn, K., & Gross, J. J. (2013). MBSR vs aerobic exercise in social anxiety: fMRI of emotion regulation of negative self-beliefs. *SCAN*, 8, 65–72.
- Hazlett-Stevens, H. (2018a). Generalized anxiety disorder symptom improvement following mindfulness-based stress reduction in a general hospital setting. *Journal of Medical Psychology*. <https://doi.org/10.3233/JMP-170012>
- Hazlett-Stevens, H. (2018b). Mindfulness-based stress reduction for generalized anxiety disorder: Does pre-treatment symptom severity relate to clinical outcomes? *Journal of Depression and Anxiety Forecast*, 1(1), 1007.
- Hazlett-Stevens, H. (2018c). Mindfulness-based stress reduction in a mental health outpatient setting: Benefits beyond symptom reduction. *Journal of Spirituality in Mental Health*, 20(3), 275–292. <https://doi.org/10.1080/019349637.2017.1413963>
- Hinton, D. E., & Patel, A. (2017). Cultural adaptations of cognitive behavioral therapy. *Psychiatric Clinics*, 40(4), 701–714. <https://doi.org/10.1016/j.psc.2017.08.006>
- Hofmann, S. G., & Hinton, D. E. (2014). Cross-cultural aspects of anxiety disorders. *Current Psychiatry Reports*, 16(6), 450. <https://doi.org/10.1007/s11920-014-0450-3>
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78, 169–183.
- Hoge, E. A., Bui, E., Marques, L., Metcalf, C. A., Morris, L. K., Robinaugh, D. J., ... Simon, N. M. (2013). Randomized controlled trial of mindfulness meditation for generalized anxiety disorder: Effects on anxiety and stress reactivity. *Journal of Clinical Psychiatry*, 74, 786–792.
- Jazaieri, H., Goldin, P. R., Werner, K., Ziv, M., & Gross, J. J. (2012). A randomized trial of MBSR versus aerobic exercise for social anxiety disorder. *Journal of Clinical Psychology*, 68, 715–731. <https://doi.org/10.1002/jclp.21863>
- Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry*, 4, 33–47.
- Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, 10, 144–156.
- Kabat-Zinn, J. (2005). *Coming to our senses*. New York, NY: Hyperion.
- Kabat-Zinn, J. (2013). *Full catastrophe living, revised and updated edition*. New York, NY: Bantam Books.
- Kabat-Zinn, J., de Torrijos, F., Skillings, A. H., Blacker, M., Mumford, G. T., Alvares, D. L., ... Rosal, M. C. (2016). Delivery and effectiveness of a dual language (English/Spanish) mindfulness-based stress reduction (MBSR) program in the inner city – A seven-year experience: 1992–1999. *Mindfulness & Self-compassion*, 1, 2–13.
- Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine*, 8, 163–190.
- Kabat-Zinn, J., Massion, A. O., Kristeller, J., & Peterson, L. G. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry*, 149, 936–943.
- Kelly, A., & Garland, E. L. (2016). Trauma-informed mindfulness-based stress reduction for female survi-

- vors of interpersonal violence: Results from a stage I RCT. *Journal of Clinical Psychology*, 72, 311–328. <https://doi.org/10.1002/jclp.22273>
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 617–627.
- Kim, Y. W., Lee, S. H., Choi, T. K., Suh, S. Y., Kim, B., Kim, C. M., ... Yook, K. H. (2009). Effectiveness of mindfulness-based cognitive therapy as an adjuvant to pharmacotherapy in patients with panic disorder or generalized anxiety disorder. *Depression and Anxiety*, 26, 601–606.
- Kim, B., Lee, S. H., Kim, Y. W., Choi, T. K., Yook, K., Suh, S. Y., ... Yook, K. H. (2010). Effectiveness of a mindfulness-based cognitive therapy program as an adjunct to pharmacotherapy in patients with panic disorder. *Journal of Anxiety Disorders*, 24, 590–595.
- King, A. P., Block, S. R., Sripada, R. K., Rauch, S., Giardino, N., Favorite, T., ... Liberzon, I. (2016). Altered default mode network (DMN) resting state functional connectivity following a mindfulness-based exposure therapy for posttraumatic stress disorder (PTSD) in combat veterans of Afghanistan and Iraq. *Depression and Anxiety*, 33, 289–299. <https://doi.org/10.1002/da.22481>
- Kirmayer, L. J., & Young, A. (1998). Culture and somatization: Clinical, epidemiological, and ethnographic perspectives. *Psychosomatic Medicine*, 60(4), 420–430.
- Koszycki, D., Bengler, M., Shlik, J., & Bradwejn, J. (2007). Randomized trial of a meditation-based stress reduction program and cognitive behavior therapy in generalized social anxiety disorder. *Behaviour Research and Therapy*, 45, 2518–2526.
- Kristeller, J. L., Baer, R. A., & Quillian-Wolever, R. (2006). Mindfulness-based approaches to eating disorders. In R. A. Baer (Ed.), *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications* (pp. 75–91). London, England: Academic Press.
- Le, T. N., & Gobert, J. M. (2015). Translating and implementing a mindfulness-based youth suicide prevention intervention in a native American community. *Journal of Child and Family Studies*, 24, 12–23.
- Le, T. N., & Proulx, J. (2015). Feasibility of mindfulness-based intervention for incarcerated mixed-ethnic native Hawaiian/Pacific Islander youth. *Asian American Journal of Psychology*, 6, 181–189.
- Lewis-Fernández, R., Hinton, D. E., Laria, A. J., Patterson, E. H., Hofmann, S. G., Craske, M. G., ... Liao, B. (2010). Culture and the anxiety disorders: Recommendations for DSM-V. *Depression and Anxiety*, 27(2), 212–229. <https://doi.org/10.1002/da.20647>
- Ma, S., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: Replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, 72, 31–40.
- Miller, J. J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders. *General Hospital Psychiatry*, 17, 192–200.
- Moitra, E., Lewis-Fernandez, R., Stout, R. L., Angert, E., Weisberg, R. B., & Keller, M. B. (2014). Disparities in psychosocial functioning in a diverse sample of adults with anxiety disorders. *Journal of Anxiety Disorders*, 28(3), 335–343. <https://doi.org/10.1016/j.janxdis.2014.02.002>
- Olano, H., Kachan, D., Tannenbaum, S. L., Mehta, A., Annane, D., & Lee, D. J. (2015). Engagement in mindfulness practices by U.S. adults: Sociodemographic barriers. *The Journal of Alternative and Complementary Medicine*, 21, 100–102.
- Piet, J., & Hougaard, E. (2011). The effect of mindfulness-based cognitive therapy for prevention of relapse in recurrent major depressive disorder: A systematic review and meta-analysis. *Clinical Psychology Review*, 31, 1032–1040.
- Piet, J., Hougaard, E., Hecksher, M. S., & Rosenberg, N. K. (2010). A randomized pilot study of mindfulness-based cognitive therapy and group cognitive-behavioral therapy for young adults with social phobia. *Scandinavian Journal of Psychology*, 51, 403–410.
- Polusny, M. A., Erbes, C. R., Thuras, P., Moran, A., Lamberty, G. J., Collins, R. C., ... Lim, K. O. (2015). Mindfulness-based stress reduction for post-traumatic stress disorder among veterans a randomized clinical trial. *Journal of the American Medical Association*, 314, 456–465. <https://doi.org/10.1001/jama.2015.8361>
- Proulx, J., Croff, R., Oken, B., Aldwin, C. M., Fleming, C., Bergen-Cico, D., ... Noorani, M. (2018). Considerations for research and development of culturally relevant mindfulness interventions in American minority communities. *Mindfulness*, 9, 361–370.
- Roemer, L., & Orsillo, S. M. (2014). An acceptance-based behavioral therapy for generalized anxiety disorder. In D. H. Barlow (Ed.), *Clinical handbook of psychological disorders: A step-by-step treatment manual* (5th ed., pp. 206–236). New York, NY: Guilford Press.
- Roth, B. (1997). Mindfulness-based stress reduction in the inner city. *Advances: The Journal of Mind-Body Health*, 13, 50–58.
- Roth, B., & Calle-Mesa, L. (2006). Mindfulness-Based Stress Reduction (MBSR) with Spanish- and English-speaking inner-city medical patients. In R. A. Baer (Ed.), *Mindfulness-based treatment approaches: Clinician's guide to evidence base and applications* (pp. 263–284). San Diego, CA: Elsevier.
- Roth, B., & Creaser, T. (1997). Mindfulness meditation-based stress reduction: Experience with a bilingual inner-city program. *The Nurse Practitioner*, 22, 150–176.
- Roth, B., & Robbins, D. (2004). Mindfulness-based stress reduction and health-related quality of life:

- Findings from a bilingual inner-city patient population. *Psychosomatic Medicine*, 66, 113–123.
- Roth, B., & Stanley, T. W. (2002). Mindfulness-based stress reduction and healthcare utilization in the inner city: Preliminary findings. *Alternative Therapies in Health and Medicine*, 8, 60–66.
- Schraufnagel, T. J., Wagner, A. W., Miranda, J., & Roy-Byrne, P. P. (2006). Treating minority patients with depression and anxiety: What does the evidence tell us? *General Hospital Psychiatry*, 28(1), 27–36. <https://doi.org/10.1016/j.genhosppsy.2005.07.002>
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2013). *Mindfulness-based cognitive therapy for depression* (2nd ed.). New York, NY: Guilford Press.
- Semple, R. J., Lee, J., Rosa, D., & Miller, L. F. (2010). A randomized trial of mindfulness-based cognitive therapy for children: Promoting mindful attention to enhance social-emotional resiliency in children. *Journal of Child and Family Studies*, 19, 218–229.
- Stockdale, S. E., Lagomasino, I. T., Siddique, J., McGuire, T., & Miranda, J. (2008). Racial and ethnic disparities in detection and treatment of depression and anxiety among psychiatric and primary health care visits, 1995–2005. *Medical Care*, 46(7), 668–677. <https://doi.org/10.1097/MLR.0b013e3181789496>
- Teasdale, J. D., Segal, Z. V., Williams, J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology*, 68, 615–623.
- Thera, N. (1965). *The heart of Buddhist meditation*. San Francisco, CA: Weiser Books.
- U.S. Bureau of the Census. (2010). *Census 2010 Briefs* [online]. Retrieved from <http://www.census.gov>
- Vega, W. A., Kolody, B., & Aguilar-Gaxiola, S. A. (2001). Help-seeking for mental health problems among Mexican-Americans. *Journal of Immigrant Health*, 3(3), 133–140. <https://doi.org/10.1023/A:1011385004913>
- Vega, W. A., & Lopez, S. R. (2001). Priority issues in Latino mental health services research. *Mental Health Services Research*, 3(4), 189–200.
- Vøllestad, J., Sivertsen, B., & Nielsen, G. H. (2011). Mindfulness-based stress reduction for patients with anxiety disorders: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy*, 49, 281–288.
- Witkeiwitz, K., Marlatt, G. A., & Walker, D. (2005). Mindfulness-based relapse prevention for substance use disorders. *Journal of Cognitive Psychotherapy*, 19, 211–228.
- Witkiewitz, K., Greenfield, B. L., & Bowen, S. (2013). Mindfulness-based relapse prevention with racial and ethnic minority women. *Addictive Behaviors*, 38, 2821–2824.
- Woods-Giscombé, C. L., & Gaylord, S. A. (2014). The cultural relevance of mindfulness meditation as a health intervention for African Americans: Implications for reducing stress-related health disparities. *Journal of holistic nursing: Official journal of the American Holistic Nurses' Association*, 32, 147–160. <https://doi.org/10.1177/0898010113519010>
- Young, A. S., Klap, R., Sherbourne, C. D., & Wells, K. B. (2001). The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry*, 58, 55–61. <https://doi.org/10.1001/archpsyc.58.1.55>