
Integrating Yoga with Psychotherapy: A Complementary Treatment for Anxiety and Depression Intégrer le yoga avec la psychothérapie : Un traitement complémentaire pour l'anxiété et la dépression

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ABSTRACT

This article addresses the empirical research on yoga as an effective, complementary, clinical intervention for anxiety and depression based on an examination of studies published from 2003 to 2010. There is a discussion of study findings and research limitations and suggestions for researchers and future research. Yoga appears to be an effective clinical intervention for anxiety and depression. However, more rigorous research needs to be completed to further support using yoga in mental health treatment planning. This article concludes with practical suggestions and implications for mental health professionals interested in using yoga.

RÉSUMÉ

Cet article traite la recherche empirique sur le yoga comme intervention clinique complémentaire effective pour l'anxiété et la dépression fondée sur une enquête des études publiées de 2003 à 2010. Une discussion des résultats des études et des limites de la recherche ainsi que des suggestions pour les chercheurs et les recherches futures sont présentées. Le yoga semble être une intervention clinique effective pour l'anxiété et la dépression. Cependant, la recherche plus rigoureuse doit être effectuée afin de soutenir l'usage du yoga dans la planification du traitement de la santé mentale. Cet article termine avec des suggestions pratiques et des implications de l'utilisation du yoga pour les professionnels de la santé mentale.

Approximately 50% of American adults suffer from a mental health disorder at some point in their lives, the most prevalent being depressive and anxiety disorders (Kessler et al., 2005). Intriguingly, people with mental health disorders, such as depression, often engage in self-help treatments before seeking treatment from a medical or mental health professional (Oliphant, 2009). Conceivably, they may choose to engage in self-help treatments in an effort to maximize financial savings, to refrain from consuming synthetic medications, or avoid negative stigmatization. People may also desire a more holistic treatment than allopathic care or psychotherapy can offer; perhaps this is why the use of complementary and alternative medicine (CAM) has surged. CAM is perceived as more wholesome, with fewer negative side effects than conventional treatments (Oliphant, 2009).

Thus, individuals are using CAM to manage chronic pain, to improve health or prevent negative health issues (Faass, 2006), and to treat mental health issues (Barnes, Bloom, & Nahin, 2008).

CAM is “a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine” (National Center for Complementary and Alternative Medicine [NCCAM], 2010, para. 2). Approximately two out of every five adults in the United States has utilized CAM (Barnes et al., 2008). Specifically, anxiety and depression are two of the mental health issues most commonly treated with CAM (Barnes et al., 2008; Pilkington, Kirkwood, Rampes, & Richardson, 2005). In fact, those with anxiety, depression, or a comorbidity of these disorders are twice as likely to use complementary and alternative treatments when compared to others with mental health disorders and four times as likely when compared to those without any mental health disorders (Wahlstrom et al., 2008).

One of the five domain categories of CAM treatments is mind-body interventions, defined as “interactions among the brain, mind, body, and behavior, with the intent to use the mind to affect physical functioning and promote health” (NCCAM, 2010, para. 9). The use of CAM mind-body interventions has increased, with yoga ranking as a commonly used CAM mind-body intervention (Barnes et al., 2008). Saper, Eisenberg, Davis, Culpepper, and Phillips (2004) found that yoga is commonly used to treat anxiety and depression. Perhaps people are attracted to yoga because they desire to integrate the body and the mind in healing. Many mental health professionals agree that the body and mind are not separate, especially those professionals who subscribe to theoretical orientations such as behavioural therapies or transpersonal, humanistic, or existential psychologies (Leijssen, 2006). However, finding mental health professionals who integrate mind-body dualism in their practice can be difficult; psychotherapeutic approaches are conceived as existing on a continuum of verbal interactions and an integration of awareness of the body (Leijssen, 2006).

Yoga is meant to supplement conventional treatments for clients with various mental health disorders, including anxiety and depression (Gerborg & Brown, 2007). The practice of yoga alone cannot correct mental illness (Douglass, 2009); professional help is necessary to treat the primary cause of the disorder (Torkos, 2008). Interestingly, as Douglass (2009) found in her research, mental health professionals recognize that yoga may be a beneficial therapeutic supplement to psychotherapy, but they are not entirely informed about why or how yoga is effective. Thus, mental health professionals may benefit from learning what makes yoga effective and why and how to incorporate their learning into their practice with clients. By understanding the relationship between yoga and physiological functioning, mental health professionals will likely appreciate the benefits of yoga and, therefore, possibly offer a more comprehensive and desired mind-body therapeutic treatment.

PHILOSOPHICAL TENETS OF YOGA

Definition

Yoga is an approximately 5,000-year-old ancient “science, art, and philosophy” derived from East Indian culture (Austin & Laeng, 2003, p. 282). The father of yoga, Patanjali, devised yoga to be one of six philosophy systems to unite the body and mind and to also unite the personal spirit with the Universal spirit (Iyengar, 1966). To fully educate the reader about yoga within the scope of this article would be impossible. People can study and practice yoga for a lifetime yet still remain in the infancy stages of understanding yoga (Austin & Laeng, 2003). Thus, my intention in writing this article is to provide an introductory understanding of yoga and its relevance for mental health professionals.

The word *yoga* translates from Sanskrit to English as “to yoke,’ reflecting its purpose in joining the mind and body in harmonious relaxation” (Dey, Barrett, & Yuan, 2003, p. 172). Since yoga first began to be practiced in North America, most people practicing yoga place less emphasis on the philosophical practice and more emphasis on the physical postures, breathing techniques, and forms of meditation (Austin & Laeng, 2003).

Hatha yoga is the most commonly practiced style of yoga in North America. It is intended to create physical and emotional balance between body and mind (Dey et al., 2003). Iyengar is known for developing Iyengar yoga, a popular type of Hatha yoga that focuses on “technical alignment” of the body (Riley, 2004, p. 21). He is also revered for promoting the practice of yoga “as a form of health care throughout the world” (Austin & Laeng, 2003, p. 284). Ashtanga and Viniyoga are also popular types of Hatha yoga and focus on movement between the postures (Riley, 2004). Regardless of the style of Hatha yoga, a contemporary practice involves concentrated breath work through a variety of standing, seated, and balancing postures followed by forms of twists and backbends or inversions, and ends with a relaxation or meditation posture (Austin & Laeng, 2003).

Breath work. The Sanskrit word *prana* signifies the spirit and has various English meanings including “breath ... life ... [or] energy” (Iyengar, 1966, p. 44). Yogic breathing techniques may be stimulating and create energy, such as Ujjayi breathing, while other techniques may be calming and create balance, such as Bhastrika breathing (Gerbarg & Brown, 2007). Accordingly, the ability to rhythmically control the breath through inhalation, exhalation, and retention in an effort to reach a pure mind is important; mastering the breath squelches cravings and distractions in the mind and fosters control over the senses, leading to a state of concentration (Iyengar, 1966). A mind that is clear and free from thoughts and cravings may be considered pure: carefree, motionless, and mindless; this mind is ready for concentration, meditation, and self-examination (Iyengar, 1966). Reaching this state is important because concentration restores tranquility in the mind (Iyengar, 1966).

Physical postures. The physical postures, known in Sanskrit as *asanas*, positively alter “flexibility, strength, coordination, balance, and circulation” of the musculo-

skeletal system (Austin & Laeng, 2003, p. 285). Each posture was created to serve a purpose: exercise of a distinct body part (Iyengar, 1966). Other physical training tools (e.g., weights) are unnecessary, as the body and its limbs provide the required tools (Iyengar, 1966). As a result, postures can be weight-bearing, stabilizing, or mobilizing (Austin & Laeng, 2003).

While the postures benefit the body physically, they also benefit the mind (Iyengar, 2002). For example, physical postures can stimulate psychological and emotional responses and can change energy levels (Austin & Laeng, 2003). Postures “can be sequenced to ... induce a variety of effects, such as to ground, soothe, stimulate, or revitalize one’s energy level” (Austin & Laeng, 2003, p. 287). Specifically, forward bends have a calming or soothing effect (Austin & Laeng, 2003); backbends and inversions are invigorating (Austin & Laeng, 2003); and balancing postures “help develop psychoemotional poise and strength” (Austin & Laeng, 2003, p. 288).

Meditation. Once the body, the mind, and the senses have been stilled through the physical postures and the concentrated breath work, meditation can begin (Iyengar, 1966). Meditation is an advanced state of contemplation reached through sustained concentration over a period of time (Iyengar, 1966). In the deepest state of meditation, the body and the senses are relaxed, and the mind is alert but not distracted (Iyengar, 1966).

LITERATURE REVIEW

There have been an abundance of studies examining yoga as an effective clinical treatment intervention for psychological and physiological concerns. Khalsa (2004) completed an extensive review of the literature examining all of the clinical studies published that used yoga as a therapeutic intervention for psychological and physiological concerns. He found that there is some evidence to support the use of yoga as a treatment intervention for popular physical health concerns, such as cardiovascular and respiratory conditions, as well as for mental health conditions such as depression, anxiety, and addiction (Khalsa, 2004). Since Khalsa’s review, additional researchers have found similar results; yoga has shown to be an effective physical intervention for the management of cardiovascular conditions (Donesky-Cuenco, Nguyen, Paul, & Carrieri-Kohlman, 2009), respiratory conditions (Vempati, Bijlani, & Deepak, 2009), chronic pain (Kolasinski et al., 2005), neurological conditions (John, Sharma, Sharma, & Kankane, 2007), as well as mental health disorders such as depression (Butler et al., 2008; Chen et al., 2009; Franzblau, Echevarria, Smith, & Van Cantfort, 2008; Krishnamurthy & Telles, 2007; Shapiro et al., 2007; Woolery, Myers, Sternlieb, & Zeltzer, 2004), anxiety (Descilo et al., 2010; Javnbakht, Kenari, & Ghasemi, 2009; Khalsa, Shorter, Cope, Wyshak, & Sklar, 2009; Kozasa et al., 2008; Lavey et al., 2005; Smith, Hancock, Blake-Mortimer, & Eckert, 2007; Subramanya & Telles, 2009; Telles, Guar, & Balkrishna, 2009; Telles, Naveen, & Dash, 2007; Telles, Singh, Joshi, & Balkrishna, 2010), and addiction (Khalsa, Khalsa, Khalsa, & Khalsa, 2008).

To fully review the efficacy of yoga as a treatment intervention for all physical and mental health disorders is outside the scope of this article. Given that anxiety and depression are the two most common mental health disorders being treated with CAM (particularly yoga), a review of the research findings for these two specific mental health disorders and plausible psychophysiological reasons to explain the research findings will be given. Below is a discussion of the relevant research studies conducted on yoga and anxiety, as well as yoga and depression, from 2003 to 2010. The discussion is organized for both anxiety and depression using the three major components of yoga: breath work, physical postures, and meditation.

Clinical Findings: Anxiety

BREATH WORK

Researchers speculated that devoting a large portion of time to focusing on the concentrated breath work aspects of a yoga practice would substantially aid in the reduction of symptoms of anxiety (Descilo et al., 2010; Khalsa et al., 2009; Kozasa et al., 2008; Telles et al., 2010). Kozasa et al. (2008) concluded that after one month of practicing breath work and meditation, both state and trait anxiety scores significantly reduced. After practicing yoga for 2 months, participants in the Khalsa et al. (2009) study reported an increase in self-confidence and clarity, as well as a reduction in fatigue and musical performance tension and anxiety. The physical and cognitive symptoms related to musical performance anxiety decreased due to the practice of yoga, particularly the breathing techniques (Khalsa et al., 2009). Telles et al. (2010) concluded in their study on the effects of yoga breathing practices on anxiety that there was an increase in feelings of anxiety in those participants who did not participate in the yoga practice. In the same year, Descilo et al. (2010) found that yoga breath work was effective in reducing symptoms of depression and anxiety, particularly posttraumatic stress disorder (PTSD).

PHYSICAL POSTURES

Khalsa et al. (2009) found that practicing yoga over a 2-month period improved physical strength, increased flexibility, and reduced physical tension in young musicians with performance anxiety. Attending three classes a week for 8 weeks, regardless of the physical intensity of the practice, created these physical changes in the participants (Khalsa et al., 2009). In the study conducted by Javnbakht et al. (2009), state and trait anxiety scores decreased significantly in women 30 to 40 years old after practicing yoga twice a week for 2 months. These researchers credited the decrease in anxiety scores to yoga's ability to increase body awareness (including body tension) and foster a sense of confidence and control over the body (Javnbakht et al., 2009).

MEDITATION

Subramanya and Telles (2009) compared the effects of cyclic meditation (yoga postures followed by supine rest) and supine rest (a relaxing yoga posture such as

shavasana) on levels of anxiety and memory scores. A short yoga practice of cyclic meditation (22:30 minutes) was significantly more effective in increasing memory scores and almost four times as effective in decreasing anxiety as the same amount of supine rest (Subramanya & Telles, 2009).

YOGA THEORY AND PHILOSOPHY

Researchers concluded that both practicing yoga and learning yoga theory are effective in reducing stress and symptoms of anxiety (Khalsa et al., 2009; Telles et al., 2009). For example, Khalsa et al.'s (2009) study contained two groups: one only practiced yoga and the other practiced and learned yoga theory. Both groups experienced decreased stress and performance anxiety (Khalsa et al., 2009). Telles et al. (2009) also found similar results in their study with two groups: one group practiced yoga and the other group watched a video to learn yoga theory. All participants reported a decrease in anxiety; however, participants who completed the 2-hour yoga practice reported a more significant decrease in anxiety symptoms (14.7%) than those participants who watched the video (3.4%; Telles et al., 2009).

Interestingly, when yoga was compared to conventional relaxation techniques designed to aid in stress management and decreasing anxiety (e.g., progressive muscle relaxation), yoga was found to be equally "as effective as relaxation with reducing stress and anxiety" (Smith et al., 2007, p. 81). Smith et al. (2007) concluded that yoga might be a safe way for people to assist themselves in managing symptoms related to anxiety and stress.

Clinical Findings: Depression

BREATH WORK

Practicing yoga breathing techniques for 45 minutes for 4 days was helpful in decreasing battered women's feelings of depression (Franzblau et al., 2008). Franzblau et al. (2008) found a significant decrease in depression scores in participants who received training in yoga breath work; specifically, participants who learned yoga breath work practices and also gave testimony experienced the most significant decrease in depression scores.

PHYSICAL POSTURES

Woolery et al. (2004) studied the effects of yoga on reducing symptoms of depression in young adults with mild depression. Researchers over a 5-week period examined a 1-hour Iyengar yoga class that focused on physical postures that "are supposed to alleviate depression, particularly back bends, [vigorous] standing poses, and inversions" (Woolery et al., 2004, p. 61). As expected, the inversions, standing physical postures of Iyengar yoga, as well as those postures that open and lift the chest, were effective in reducing depression scores by almost one-third and significantly improving mood (Woolery et al., 2004). Woolery et al. (2004) proposed that the backbends, inversions, and standing postures "enhanced feelings

of mastery ... [and] may have countered the slumped body posture associated with depression” (p. 62).

Shapiro et al. (2007) also examined Iyengar yoga postures as an additional treatment for people experiencing symptoms of remission but taking antidepressant medications for unipolar major depression (Shapiro et al., 2007). After the study participants took 20 sessions of yoga practice three times weekly, Shapiro et al. found that an Iyengar yoga practice with inversions, standing postures, and postures that expand the chest were helpful in diminishing mood-related symptoms of depression. The physical postures positively increased mood state experiences of people with depression and also positively reduced other mental health areas such as anxiety; participants reported increases in positive mood characteristics (e.g., confidence and happiness) and energy levels (e.g., attentiveness), as well as decreases in negative mood characteristics (e.g., frustration and pessimism) (Shapiro et al., 2007). Interestingly, researchers concluded that improvements in mood after a yoga practice are not dependent on gender or having a mood disorder diagnosis (Lavey et al., 2005).

MEDITATION

Krishnamurthy and Telles (2007) studied changes in depression scores in severely depressed seniors after practicing yoga versus receiving ayurveda medicine (herbal preparations). After 6 months of practicing yoga 6 days a week for 75 minutes a day, only the participants who practiced yoga showed significant decreases in depression (Krishnamurthy & Telles, 2007). Krishnamurthy and Telles reported that participants most enjoyed the last 15 minutes of the practice spent on devotional spiritual meditation songs; the songs “may have been able to give participants a group experience of expressing emotions, as well as a better acceptance of themselves” (2007, p. 22). Butler et al. (2008) also examined the effects of yoga, including meditation, on symptoms of chronic mild depression. Participants who received yoga and meditation training experienced the largest remission rate at 77% and did not develop any new depressive episodes regardless of using medications or receiving psychotherapy (Butler et al., 2008). Butler et al. concluded that meditation in yoga “may be used to let go of thoughts that maintain the depressive affect” (p. 816).

YOGA THEORY AND PHILOSOPHY

No published studies were found in this exhaustive literature review on depression and how learning yoga theory and philosophy affects levels of depression.

Explanations of Yoga's Potency

After practicing yoga, people often report many “beneficial emotional, psychological, behavioral, and biological effects” (Shapiro et al., 2007, p. 501); an increased feeling of well-being is one important example (Dey et al., 2003). People experience beneficial changes to both the mind and body because “yoga creates change in the neurophysiology of the body” (Douglass, 2009, p. 127). The con-

nection between yoga and psychophysiology is gaining interest from researchers, and several hypotheses have been put forth to explain why yoga creates cognitive and physical changes. Researchers strongly suspect that yoga is effective because it positively alters brain neurochemistry (Streeter et al., 2007), and it “counteract[s] stress and reduce[s] autonomic arousal” (Khalsa, 2004, p. 277) of the autonomic nervous system (ANS), including the sympathetic nervous system (Ross & Thomas, 2010).

The causes of anxiety and depression can be “genetic, environmental, psychological, emotional, and social” (Forbes et al., 2008, p. 88), all of which change neurobiology (Forbes et al., 2008). Recently, researchers examined the effect of yoga on several neurotransmitters known to be involved with anxiety and depression; cortisol, gamma-aminobutyric acid (GABA), serotonin, and melatonin are strongly related to the regulation of stress and mood (Douglass, 2009).

BREATH WORK

Researchers examined ANS functioning and noted that yoga, especially the breath work, increases heart rate variability (Khattab, Khattab, Ortak, Richardt, & Bonnemeier, 2007), decreases blood pressure levels (Harinath et al., 2004), and decreases respiratory rates (Raghuraj & Telles, 2008). For people with mild to moderate depression, practicing Sudarshan Kriya Yoga (SKY) can improve depressive symptoms (Brown & Gerbarg, 2005b). For people with anxiety, practicing Ujjayi breath work as part of SKY “can restore a sense of control” (Brown & Gerbarg, 2005b, p. 713). Thus, using yoga breath work to counteract the ANS causes the sympathetic and the parasympathetic nervous system to function effectively in response to stress instead of “becoming hypo-reactive or hyper-reactive” (Brown & Gerbarg, 2005a, p. 195).

PHYSICAL POSTURES

People anecdotally report feeling more at ease after a yoga practice (Douglass, 2009). Researchers attributed these feelings of relaxation to decreased cortisol levels; “cortisol is referred to as the ‘stress hormone’” (Douglass, 2009, p. 128) and is released during stress to prepare the body for a stress response (Ross & Thomas, 2010). A stress response is a physical or cognitive reaction “resulting from various disturbing physical, emotional, or chemical factors” (Sarbadhikari & Saha, 2006, Background, para. 2). Interestingly, Granath, Ingvarsson, von Thiele, and Lundberg (2006) found that after 10 sessions of a yoga practice focused on physical postures, an increased level in cortisol occurred in participants. Woolery et al. (2004) also found that after 10 yoga classes emphasizing Iyengar style postures, those who completed a regular 1-hour practice, twice a week, had higher levels of morning cortisol by the end of the 5 weeks than the control group who did not participate in yoga activities. Higher levels of cortisol are usually associated with a response to stress. However, in those people who experience above-average levels of a stress response, normal homeostasis of neurobiological systems may be disrupted (Lydiard, 2003). Thus, researchers

suggested that finding increased levels of morning cortisol may be a positive measure (Granath et al., 2006; Woolery et al., 2004), especially for those people with anxiety or depression who may have a lowered or altered homeostasis of neurobiology.

Lower GABA levels have been found in people with depression (Brambilla, Perez, Barale, Schettini, & Soares, 2003) and anxiety (Lydiard, 2003). Streeter et al. (2007) speculated that the physical postures of yoga would increase GABA activity levels in the brain, thus decreasing anxious and depressive symptoms. After the participants in the study completed a 1-hour session of yoga postures, Streeter et al. (2007) indeed found that GABA levels increased by approximately one-quarter when compared with baseline measurements, regardless of the type of yoga practiced.

Serotonin is also believed to improve mood states (Douglass, 2009). Davies et al. (2006) found that serotonin regulates both psychological and cardiovascular responses to stress in people with anxiety. To this author's knowledge, there have been no studies published on yoga's effect on serotonin levels. However, Young (2007) noted that there are many non-pharmacological methods for increasing serotonin, including exercise. Interestingly, Netz and Lidor (2003) examined the effects of mindful exercise (e.g., yoga) versus aerobic exercise (e.g., swimming) on anxiety and depressive mood. These researchers concluded that after just one session, mindful exercise more effectively reduced anxiety and increased positive mood than aerobic exercise (Netz & Lidor, 2003). Netz and Lidor proposed that this finding may be due to the cognitive focus found in mindful activities.

MEDITATION

Melatonin is believed to regulate mood and sleep patterns (Douglass, 2009). In Harinath et al.'s (2004) study, researchers found that participants had increased melatonin levels after practicing yoga, particularly meditation. Additionally, researchers found that people with depression who practiced yoga reported feeling more positive about themselves and their health and also reported sleeping better (Chen et al., 2009). Harinath et al. (2004) hypothesize that the participants' positive reports may be due to increased levels of melatonin.

Summary

Yoga reduced anxiety for people with state, trait, and performance anxiety as well as for people with PTSD. The breath work practice, meditation practice, and learning about yoga practices decreased feelings of anxiety, whereas the physical postures decreased the physical symptoms of tension and anxiety. Given that yoga was found to be as effective as conventional relaxation techniques in reducing stress and anxiety, people with anxiety may wish to also consider the unconventional relaxation techniques of yoga.

Yoga reduced depression for people with many forms of depression, including those who were taking antidepressant medications or participating in conven-

tional psychotherapy. Particularly, the physical postures of Iyengar yoga had many physical and cognitive benefits for people with depression. Focusing on postures that open and lift the chest counteracted feelings of depression, increased positive mood, offset the collapsed body posture, and helped people with depression. Additionally, the breath work practices gave people with depression a sense of control over their bodies, while the meditation practices allowed people with depression to release patterns of rumination on depressive thoughts.

Studies showed that yoga improved participants' psychophysiology. For example, the autonomic nervous system response became regulated, and neurotransmitter and hormone levels positively changed. After practicing yoga, a form of homeostasis was created in the body similar to the effects of conventional medications. Thus, yoga may be an appropriate non-pharmacological clinical intervention for treating anxiety and depression (Javnbakht et al., 2009).

Research Critique

Several issues with the methodology of the studies reviewed may limit the validity of the results supporting the use of yoga as a clinical intervention for anxiety and depression. The methodological issues preventing researchers from concluding that yoga is an effective treatment intervention for anxiety or depression are fourfold. First, more rigorous research needs to be done, especially randomized, controlled trials (RCTs). Approximately half of the studies reviewed were RCTs. While the aforementioned studies show promising results, researchers are in the infant stages of drawing conclusions about the efficacy of yoga as a treatment intervention for anxiety and depression.

A second methodological concern is that researchers have not determined which type of yoga, which aspect of yoga, or what amount of yoga creates the most psychological benefit for those with anxiety or depression. Researchers used a range of yoga interventions from gentle practices such as Hatha yoga to invigorating practices such as Ashtanga yoga, which altered the types of breathing techniques, physical postures, and forms of meditation. Also, the length of time, the amount of time, and the intensity of the yoga intervention varied; some participants in the studies received one yoga intervention while other participants received days, weeks, or months of practice. Thus, researchers may wish to focus on a style of yoga and an aspect of yoga to narrow the scope of research. Additionally, researchers could examine the benefits derived from a regular yoga practice over a substantial period of time.

A third concern is that it is difficult to generalize the findings regarding yoga's potential effectiveness to all people with anxiety or depression because the participants in each study varied in ethnicity, age, sex, yoga experience, motivation, and severity of anxious or depressive symptoms. Participants in some studies were East Indian while participants in other studies were not, which may potentially have created biases in the results, given that yoga may be a familiar form of health practice in East Indian culture (Descilo et al., 2010).

Some studies had participants similar in age while others had a range of ages. Additionally, some studies included both male and female participants but others included either female or male participants. Further, participants in some of the studies were unfamiliar with yoga or yoga techniques while others were familiar and were current yoga practitioners. The participants' motivation and interest in participating in yoga practice were also incongruent between studies. Finally, the severity of anxious or depressive symptoms ranged from anticipated symptoms to formal diagnoses of disorders. As well, there was no consistency in the assessment tools used to evaluate the anxiety and depression. Thus, it will be important for researchers to conduct studies that have a larger sample size, as well as a representative sample population, in order to generalize findings.

Fourth, there is a paucity of information on safety or contraindications with respect to yoga. Information on any adverse effects related to the practice of yoga was not explored in any of the studies reviewed. However, it is important that people understand the techniques of yoga to avoid incorrect practices leading to harmful consequences. For example, people with a pre-existing medical condition such as pregnancy should avoid practicing certain breathing techniques (Sharma, 2007). Thus, it will be important for researchers to examine any contraindications and determine which type of yoga is appropriate for people who do have pre-existing health conditions or comorbid health conditions.

Implications for Researchers

How researchers measure the effectiveness of yoga is complicated. There is a lack of congruence between Western quantitative research methods and the Eastern philosophy of complementary and alternative medicine; the individualized, comprehensive, and multidimensional nature of these interventions is difficult to measure quantitatively with RCTs (Spencer, 2003). Applying Western scientific scrutiny to the holistic practice of yoga may jeopardize the sacredness and holistic unity of yoga. Conceivably, both qualitative and quantitative methods may be useful in validating the effectiveness of yoga. Quantitative evidence "shows effects that are statistically significant according to predefined criteria [but] do not address why an intervention is effective, meaningful, or beneficial" (Lake, 2007, p. 71) whereas qualitative data assess "the impact of a treatment on quality of life" (Lake, 2007, p. 71).

Interestingly, Indian researchers have conducted most of the research on the effectiveness of yoga (Khalsa, 2004). In comparison, Western researchers have published fewer studies, but they have conducted more RCTs than Indian researchers (Khalsa, 2004). Khalsa (2004) posited that researchers, particularly Indian researchers, should implement research designs that are more rigorous to continue to validate the effectiveness of yoga as a clinical treatment intervention. The development of a standardized yoga practice manual may be helpful for effectively studying yoga in a respectful yet rigorous way (Uebelacker, Epstein-Lubow, et al., 2010; Uebelacker, Tremont, et al., 2010).

SUGGESTIONS FOR PRACTICE FOR MENTAL HEALTH PROFESSIONALS

Despite the lack of conclusive research evidence to support integrating yoga as an effective clinical treatment, yoga continues to be a popular complementary and alternative treatment. Integrating yoga with psychotherapy may allow mental health professionals to work more collaboratively with clients. Uebelacker, Tremont, et al. (2010) argued that yoga and psychotherapy can be easily married, as there “are many similarities between psychotherapy and yoga” (p. 259), both are multidimensional, and each can be implemented uniquely (Uebelacker, Tremont, et al., 2010). However, most mental health professionals do not have training in CAM (Bassman & Uellendahl, 2003). Consequently, integrating yoga with psychotherapy encourages mental health professionals to refer clients to suitable yoga classes, collaborate with a yoga therapist to co-manage clients, and/or become yoga therapists themselves to deliver both psychotherapy and yoga in one session.

For clients with anxiety or depression who are willing to participate in community-based yoga classes, yoga may be used as a supplement to psychotherapy. Accordingly, it is important that clients be accurately matched to a suitable type of yoga (Boudette, 2006). Thus, a large onus is placed on the mental health professional to be sufficiently informed about the practice of yoga and about suitable types of yoga to help the client select an appropriate class. Additionally, a large onus is placed on the client to be willing to participate in a community-based yoga class; clients need to feel safe doing yoga in order to benefit from the practice.

For clients who may resist joining a community-based yoga class, mental health professionals may alternatively refer clients with a diagnosis of anxiety and/or depression to a yoga therapist as “an adjunct to psychotherapy or medication management” (Forbes et al., 2008, p. 90). A yoga therapist is certified in the practice of yoga and is responsible for designing an individual yoga practice to treat a person’s mental and physical health (Khalsa et al., 2009). In such a scenario, the client may complete a session with the mental health professional and then join the yoga therapist for a private, supervised, and uniquely designed yoga practice. Both the referring mental health professional and the yoga therapist may work together to co-manage clients and deliver a suitable mind-body treatment.

Given that the licensing procedures greatly vary for CAM practitioners (White, 2000), it is helpful for mental health professionals to be aware of competent CAM practitioners to guide the referral process for the client. If clients are left on their own to find a CAM practitioner, they may find a practitioner who is licensed but “less than fully competent and trustworthy” (Bassman & Uellendahl, 2003, p. 267). Currently, there is a lack of national standards regulating the licensing process for yoga therapists (Douglass, 2009). Thus, it would be beneficial for mental health professionals interested in using yoga with psychotherapy to familiarize themselves with local yoga therapists suitably qualified to co-manage clients with anxiety and depression.

For mental health professionals who wish to offer yoga and psychotherapy as a mind-body treatment in a single cohesive session, seeking dual accreditation

to also become a licensed yoga therapist is necessary. Interestingly, White (2000) pioneered the idea of an integrative medical psychology that combines psychology with CAM interventions to provide more holistic care. White is a dually trained practitioner: she is a psychologist, and she is also a CAM practitioner trained “in Oriental medicine and homeopathy” (p. 678). White acknowledged that being a dually trained practitioner does create many questions about boundaries and may elicit uncertainty for clients. However, she noted that in many CAM practices, the offering of a “body-mind treatment” by one practitioner is extremely beneficial (White, 2000, p. 679).

Implications for Practice

Several implications arise when combining yoga and psychotherapy; mental health professionals can offer a larger continuum of care, but their legal and ethical responsibilities will also expand.

CONTINUUM OF CARE

For mental health professionals, integrating yoga with psychotherapy enables them to offer an expanded continuum of care beyond psychotherapeutic and pharmacological interventions. Therapy can be individualized for the needs of each client, rather than making all clients fit one psychotherapeutic approach (Strozier, 2008). Expanding the continuum of care to include yoga may help mental health professionals consider new ways of understanding mental health, illness, and healing. It is possible that mental health professionals have failed to notice the value in providing wholesome solutions “in addition to or in lieu of psychotherapy and prescription medications” to address mental health concerns (White, 2009, p. 633).

LEGAL RESPONSIBILITIES

Mental health professionals assume a far greater burden of liability, including greater legal accountability for malpractice, by incorporating CAM with psychotherapy even when they co-manage clients with CAM practitioners or use CAM themselves within psychotherapeutic sessions (Cohen & Schouten, 2007). Therefore, mental health professionals providing CAM mind-body treatments could collect clients’ detailed medical history to avoid recommending a complementary and alternative treatment that may negatively harm pre-existing medical conditions (Cohen & Schouten, 2007). For example, mental health practitioners should avoid recommending certain yoga breath work techniques to clients who hyperventilate, faint, or have high blood pressure because it may exacerbate clients’ anxiety (Sharma, 2007).

Additionally, mental health professionals should provide treatment that has research evidence to support its effectiveness (Cohen & Schouten, 2007). Cohen and Schouten (2007) recommended that conventional treatments should be the initial form of care, especially if the client’s “condition can be readily cured by conventional care” (p. 24). Lake (2007) maintained that it is safe to combine

conventional treatments with CAM when there is sufficient evidence from RCTs regarding the efficacy of each treatment; case studies may be considered for CAM when few RCTs have been completed. Thus, for people with anxiety or depression who are interested in combining yoga with treatment, it may be advantageous for mental health professionals to recommend conventional psychotherapeutic and pharmacological treatments first before the incorporation of yoga is considered. However, given that the conventional treatment for anxiety and depression is not always effective, that people may not want to take medications, that people may desire a more holistic treatment, and that there are minimal risks associated with an informed yoga practice, yoga is a viable treatment option to consider alongside conventional treatments in the decision-making process.

ETHICAL RESPONSIBILITIES

Mental health professionals have an increased ethical responsibility to get informed consent before integrating any treatments with clients (Canadian Association of Social Workers [CASW], 2005; Canadian Counselling and Psychotherapy Association [CCPA], 2007; Canadian Psychological Association [CPA], 2000). Ensuring that clients are sufficiently educated about treatment options in decision-making is necessary. It is optimal to collaborate with clients to assess and examine the risks and the benefits of combining treatment options, including the safety of combining conventional and complementary treatments (Lake, 2007). Mental health professionals also have an increased ethical responsibility to be accurate and honest about their areas of competence, knowledge, and practice, and need to receive adequate training and supervision before declaring competency in various treatments (CASW, 2005; CCPA, 2007; CPA, 2000). White (2009) recommended 15 hours of training as the minimum for psychologists to sufficiently learn about CAM. Additionally, mental health professionals have an increased ethical responsibility to adhere to ethical principles of confidentiality, especially when referring and/or co-managing clients with other professionals (CASW, 2005; CCPA, 2007; CPA, 2000). Finally, mental health professionals have an increased responsibility to manage boundaries (CASW, 2005) and dual relationships (CCPA, 2007; CPA, 2000), especially if they are accredited as both mental health professionals and CAM practitioners (they will also have to manage two sets of codes of ethics, scopes of practice, and licensing procedures).

Thus, it is extremely important that mental health professionals do not recommend or force yoga on clients who are uninformed about the risks and benefits of a yoga practice or who are ambivalent or uncomfortable with the intervention; integrating yoga works best for clients interested in participating in and committing to a regular yoga practice. If a mental health professional is not adequately trained as a yoga therapist, the professional should be honest about his or her lack of training and competency with the client and not implement yoga practices within sessions but should instead refer the client to a qualified yoga therapist. Mental health professionals should also respect client confidentiality when collaborating with yoga therapists. Some clients may share

the same information with both a yoga therapist and a mental health professional, while others may choose to share only certain information with either professional.

Finally, if trained in both disciplines, the professional has to carefully establish appropriate boundaries as both a mental health professional and a yoga therapist in the relationship with the client. For example, in most talk therapies, the mental health professional does not touch the client, whereas in a yoga session, the yoga therapist may touch the client to adjust the posture or support a position. Being cognizant of the differing boundaries of the two professional roles should help navigate the dual relationship with the client.

CONCLUSION

People often seek alternative ways to manage their anxiety and depression; self-help treatments such as yoga seem to offer desirable physical and mental benefits, especially when conventional treatments for anxiety and depression may not always be desirable or effective. Thus, addressing anxiety and depression through the concentrated breath work practices, physical postures, and meditation of yoga may be an additional way for mental health professionals to treat anxiety and depression. Accordingly, it is important that mental health professionals encourage more rigorous research to further support the efficacy of yoga as a clinical treatment intervention for anxiety and depression, as there is a paucity in the current research. Those mental health professionals who choose to use yoga as a complementary treatment with psychotherapy may work more collaboratively with clients, deliver a more individualized therapeutic treatment, and implement a more holistic therapy.

References

- Austin, S., & Laeng, S. (2003). Yoga. In J. L. Carlson (Eds.), *Complementary therapies and wellness: Practice essentials for holistic health care* (pp. 282–294). Upper Saddle River, NJ: Pearson Education.
- Barnes, P. M., Bloom, B., & Nahin, R. L. (2008). *Complementary and alternative medicine use among adults and children: United States, 2007*. Retrieved from <http://nccam.nih.gov/news/2008/nhsr12.pdf>
- Bassman, L. E., & Uellendahl, G. (2003). Complementary/alternative medicine: Ethical, professional, and practical challenges for psychologists. *Professional Psychology: Research and Practice, 34*(3), 264–270. doi:10.1037/0735-7028.34.3.264
- Boudette, R. (2006). Question & answer: Yoga in the treatment of disordered eating and body image disturbance: How can the practice of yoga be helpful in recovery from an eating disorder? *Eating Disorders, 14*, 167–170. doi:10.1080/10640260500536334
- Brambilla, P., Perez, J., Barale, F., Schettini, G., & Soares, J. C. (2003). GABAergic dysfunction in mood disorders. *Molecular Psychiatry, 8*, 721–737. doi:10.1038/sj.mp.4001362
- Brown, R. P., & Gerbarg, P. L. (2005a). Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part I—Neurophysiologic model. *Journal of Alternative and Complementary Medicine, 11*(1), 189–210.
- Brown, R. P., & Gerbarg, P. L. (2005b). Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part II—Clinical applications and guidelines. *Journal of Alternative and Complementary Medicine, 11*(4), 711–717.

- Butler, L. D., Waelde, L. C., Hastings, T. A., Chen, X.-H., Symons, B., Marshall, J., ... Spiegel, D. (2008). Meditation with yoga, group therapy with hypnosis, and psychoeducation for long-term depressed mood: A randomized pilot trial. *Journal of Clinical Psychology, 64*(7), 806–820. doi:10.1002/jclp.20496
- Canadian Association of Social Workers. (2005). *Code of ethics*. Ottawa, ON: Author.
- Canadian Counselling and Psychotherapy Association. (2007). *Code of ethics*. Ottawa, ON: Author.
- Canadian Psychological Association. (2000). *Canadian code of ethics for psychologists* (3rd ed.). Ottawa, ON: Author.
- Chen, K.-M., Chen, M.-H., Chao, H.-C., Hung, H.-M., Lin, H.-S., & Li, C.-H. (2009). Sleep quality, depression state, and health status of older adults after silver yoga exercises: Cluster randomized trial. *International Journal of Nursing Studies, 46*, 154–163. doi:10.1016/j.ijnurstu.2008.09.005
- Cohen, M. H., & Schouten, R. (2007). Legal, regulatory, and ethical issues. In J. Lake & D. Spiegel (Eds.), *Complementary and alternative treatments in mental health care* (pp. 21–33). Arlington, VA: American Psychiatric.
- Davies, S. J. C., Hood, S. D., Argyropoulos, S. V., Morris, K., Bell, C., Witchel, H. J., ... Potokar, J. P. (2006). Depleting serotonin enhances both cardiovascular and psychological stress reactivity in recovered patients with anxiety disorders. *Journal of Clinical Pharmacology, 26*(4), 414–418. doi:10.1097/01.jcp.0000227704.79740.c0
- Descilo, T., Vedamurtachar, A., Gerbarg, P. L., Nagaraja, D., Gangadhar, B. N., Damodaran, B., ... Brown, R. P. (2010). Effects of a yoga breath intervention alone and in combination with an exposure therapy for post-traumatic stress disorder and depression in survivors of the 2004 South-East Asia tsunami. *Acta Psychiatrica Scandinavica, 121*, 289–300. doi:10.1111/j.1600-0447.2009.01466.x
- Dey, L., Barrett, P. J., & Yuan, C.-S. (2003). Other forms of complementary and alternative medicine therapy. In C.-S. Yuan & E. J. Beiber (Eds.), *Textbook of complimentary and alternative medicine* (pp. 165–202). New York, NY: Parthenon.
- Donesky-Cuenco, D., Nguyen, H. Q., Paul, S., & Carrieri-Kohlman, V. (2009). Yoga therapy decreases dyspnea-related distress and improved functional performance in people with chronic obstructive pulmonary disease: A pilot study. *Journal of Alternative and Complementary Medicine, 15*(3), 225–234. doi:10.1089/acm.2008.0389
- Douglass, L. (2009). Yoga as an intervention in the treatment of eating disorders: Does it help? *Eating Disorders, 17*, 126–139. doi:10.1080/10640260802714555
- Faass, N. (2006). Who uses complementary medicine? In D. Rakel & N. Faass (Eds.), *Complementary medicine in clinical practice* (pp. 9–17). Sudbury, MA: Jones & Bartlett.
- Forbes, B., Akturk, C., Cummer-Nacco, C., Gaither, P., Gotz, J., Harper, A., & Hartsell, K. (2008). Yoga therapy in practice: Using integrative yoga therapeutics in the treatment of comorbid anxiety and depression. *International Journal of Yoga Therapy, 18*, 87–95.
- Franzblau, S. H., Echevarria, S., Smith, M., & Van Cantfort, T. E. (2008). A preliminary investigation of the effects of giving testimony and learning yogic breathing techniques on battered women's feelings of depression. *Journal of Interpersonal Violence, 23*(12), 1800–1808. doi:10.1177/0886260508314329
- Gerbarg, P. L., & Brown, R. P. (2007). Yoga. In J. Lake & D. Spiegel (Eds.), *Complementary and alternative treatments in mental health care* (pp. 381–400). Arlington, VA: American Psychiatric.
- Granath, J., Ingvarsson, S., von Thiele, U., & Lundberg, U. (2006). Stress management: A randomized study of cognitive behavioral therapy and yoga. *Cognitive Behaviour Therapy, 35*(1), 3–10. doi:10.1080/16506070500401292
- Harinath, K., Malhotra, A. S., Pal, K., Prasad, R., Kumar, R., Kain, T. C., ... Sawhney, R. C. (2004). Effects of Hatha yoga and Omkar meditation on cardiorespiratory performance, psychologic profile, and melatonin secretion. *Journal of Alternative and Complementary Medicine, 10*(2), 261–268.
- Iyengar, B. K. S. (1966). *Light on yoga*. New York, NY: Schocken.
- Iyengar, B. K. S. (2002). *Light on the yoga sutras of Patanjali*. London, UK: Thorsons.

- Javnbakht, M., Kenari, R. H., & Ghasemi, M. (2009). Effects of yoga on depression and anxiety of women. *Complementary Therapies in Clinical Practice, 15*, 102–104. doi:10.1016/j.ctcp.2009.01.003
- John, P. J., Sharma, N., Sharma, C. M., & Kankane, A. (2007). Effectiveness of yoga therapy in the treatment of migraine without aura: A randomized controlled trial. *Headache, 47*, 654–661. doi:10.1111/j.1526-4610.2007.00789.x
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication [Abstract]. *Archives of General Psychiatry, 62*(6), 593–603.
- Khalsa, S. B. S. (2004). Yoga as a therapeutic intervention: A bibliometric analysis of published research studies. *Indian Journal of Physiology and Pharmacology, 48*(3), 269–285.
- Khalsa, S. B. S., Khalsa, G. S., Khalsa, H. K., & Khalsa, M. K. (2008). Evaluation of a residential Kundalini yoga lifestyle pilot program for addiction in India. *Journal of Ethnicity in Substance Abuse, 7*(1), 67–79. doi:10.1080/15332640802081968
- Khalsa, S. B. S., Shorter, S. M., Cope, S., Wyshak, G., & Sklar, E. (2009). Yoga ameliorates performance anxiety and mood disturbance in young professional musicians. *Applied Psychophysiology and Biofeedback, 34*, 279–289. doi:10.1007/s10484-009-9103-4
- Khattab, K., Khattab, A. A., Ortak, J., Richardt, G., & Bonnemeier, H. (2007). Iyengar yoga increases cardiac parasympathetic nervous modulation among healthy yoga practitioners. *Evidence-based alternative and complementary medicine*. Advance online publication. doi:10.1093/ecam/nem087
- Kolasinski, S. L., Garfinkel, M., Tsai, A. G., Matz, W., Van Dyke, A., & Schumacher, H. R. (2005). Iyengar yoga for treating symptoms of osteoarthritis of the knees: A pilot study. *Journal of Alternative and Complementary Medicine, 11*(4), 689–693.
- Kozasa, E. H., Santos, R. F., Rueda, A. D., Benedito-Silva, A. A., De Moraes Ornellas, F. L., & Leite, J. R. (2008). Evaluation of Siddha Samadhi yoga for anxiety and depression symptoms: A preliminary study. *Psychological Reports, 103*, 271–274. doi:10.2466/PRO.103.1.271-274
- Krishnamurthy, M. N., & Telles, S. (2007). Assessing depression following two ancient Indian interventions: Effects of yoga and ayurveda on older adults in a residential home. *Journal of Gerontological Nursing, 33*(2), 17–23.
- Lake, J. (2007). Integrative approaches. In J. Lake & D. Spiegel (Eds.), *Complementary and alternative treatments in mental health care* (pp. 63–82). Arlington, VA: American Psychiatric.
- Lavey, R., Sherman, T., Mueser, K. T., Osborne, D. D., Currier, M., & Wolfe, R. (2005). The effects of yoga on mood in psychiatric inpatients. *Psychiatric Rehabilitation Journal, 28*(4), 399–402. Retrieved from <http://www.bu.edu/cpr/prj/>
- Leijssen, M. (2006). Validation of the body in psychotherapy. *Journal of Humanistic Psychology, 46*(2), 126–146. doi:10.1177/0022167805283782
- Lydiard, B. R. (2003). The role of GABA in anxiety disorders. *Journal of Clinical Psychiatry, 64*(supp 3), 21–27.
- National Center for Complementary and Alternative Medicine. (2010). *What is complementary and alternative medicine?* Retrieved from <http://nccam.nih.gov/health/whatiscam/>
- Netz, Y., & Lidor, R. (2003). Mood alterations in mindful versus aerobic exercise modes. *Journal of Psychology: Interdisciplinary and Applied, 137*(5), 405–419.
- Oliphant, T. (2009). “I am making my decision on the basis of my experience”: Constructing authoritative knowledge about treatments for depression. *Canadian Journal of Information and Library Science, 33*(3/4), 215–232.
- Pilkington, K., Kirkwood, G., Rampes, H., & Richardson, J. (2005). Yoga for depression: The research evidence. *Journal of Affective Disorders, 89*, 13–24. doi:10.1016/j.jad.2005.08.013
- Raghuraj, P., & Telles, S. (2008). Immediate effect of specific nostril manipulating yoga breathing practices on autonomic and respiratory variables. *Applied Psychophysiology and Biofeedback, 33*, 65–75. doi:10.1007/s10484-008-9055-0
- Riley, D. (2004). Hatha yoga and the treatment of illness. *Alternative Therapies in Health and Medicine, 10*(2), 20–21.

- Ross, A., & Thomas, S. (2010). The health benefits of yoga and exercise: A review of comparison studies. *Journal of Alternative and Complementary Studies*, 16(1), 3–12. doi:10.1089/acm.2009.0044
- Saper, R. B., Eisenberg, D. M., Davis, R. B., Culpepper, L., & Phillips, R. S. (2004). Prevalence and patterns of adult yoga use in the United States: Results of a national survey. *Alternative Therapies in Health and Medicine*, 10(2), 44–49.
- Sarbadhikari, S. N., & Saha, A. K. (2006). Moderate exercise and chronic stress produce counteractive effects on different areas of the brain by acting through various neurotransmitter receptor subtypes: A hypothesis. *Theoretical Biology and Medical Modelling*, 3(33). doi:10.1186/1742-4682-3-33
- Shapiro, D., Cook, I. A., Davydov, D. M., Ottaviani, C., Leuchter, A. F., & Abrams, M. (2007). Yoga as a complementary treatment of depression: Effects of traits and moods on treatment outcome. *Evidence-based complementary and alternative medicine*. Advance online publication. doi:10.1093/ecam/nel114
- Sharma, V. P. (2007). Yoga therapy in practice: Pranayama can be practiced safely. *International Journal of Yoga Therapy*, 17, 75–79.
- Smith, C., Hancock, H., Blake-Mortimer, J., & Eckert, K. (2007). A randomized comparative trial of yoga and relaxation to reduce stress and anxiety. *Complementary Therapies in Medicine*, 15, 77–83. doi:10.1016/j.ctim.2006.05.001
- Spencer, J. (2003). Essential issues in complementary and alternative medicine. In J. W. Spencer & J. J. Jacobs (Eds.), *Complementary and alternative medicine: An evidence-based approach* (pp. 2–39). St. Louis, MO: Mosby.
- Streeter, C. C., Jensen, J. E., Perlmutter, R. M., Cabral, H. J., Tian, H., Terhune, D. B., ... Renshaw, P. F. (2007). Yoga asana sessions increase brain GABA levels: A pilot study. *Journal of Alternative and Complementary Medicine*, 13(4), 419–426. doi:10.1089/acm.2007.6338
- Strozier, A. L. (2008). Introduction. In A. L. Strozier & J. Carpenter (Eds.), *Introduction to alternative and complementary therapies* (pp. 1–8). Binghamton, NY: Haworth Press, Taylor & Francis.
- Subramanya, P., & Telles, S. (2009). Effect of two yoga-based relaxation techniques on memory scores and state anxiety. *BioPsychoSocial Medicine*, 3(8). doi:10.1186/1751-0759-3-8
- Telles, S., Guar, V., & Balkrishna, A. (2009). Effect of yoga practice session and yoga theory session on state anxiety. *Perceptual Motor Skills*, 109(3), 924–930. doi:10.2466/PMS.109.3.924-930
- Telles, S., Naveen, K. V., & Dash, M. (2007). Yoga reduces symptoms of distress in tsunami survivors in the Andaman Islands. *Evidence-Based Complementary and Alternative Medicine*, 4(4), 503–509. doi:10.1093/ecam/nem069
- Telles, S., Singh, N., Joshi, M., & Balkrishna, A. (2010). Post traumatic stress symptoms and heart rate variability in Bihar flood survivors following yoga: A randomized controlled study. *BMC Psychiatry*, 10(18), 1–10. doi:10.1186/1471-244X-10-18
- Torkos, S. (2008). *The Canadian encyclopedia of natural medicine*. Mississauga, ON: Wiley.
- Uebelacker, L. A., Epstein-Lubow, G., Gaudiano, B. A., Tremont, G., Battle, C., & Miller, I. W. (2010). Hatha yoga for depression: Critical review of the evidence for efficacy, plausible mechanisms of action, and directions for future research. *Journal of Psychiatric Practice*, 16(1), 22–33.
- Uebelacker, L. A., Tremont, G., Epstein-Lubow, G., Gaudiano, B. A., Gillette, T., Kalibatseva, Z., & Miller, I. W. (2010). Open trial of Vinyasa yoga for persistently depressed individuals: Evidence of feasibility and acceptability. *Behavior Modification*, 34(3), 247–264. doi:10.1177/0145445510368845
- Vempati, R., Bijlani, R. L., & Deepak, K. K. (2009). The efficacy of a comprehensive lifestyle modification programme based on yoga in the management of bronchial asthma: A randomized controlled trial. *BMC Pulmonary Medicine*, 9(37), 1–12. doi:10.1186/1471-2466-9-37
- Wahlstrom, M., Sihvo, S., Haukkala, A., Kiviruusu, O., Pirkola, S., & Isometsa, E. (2008). Use of mental health services and complementary and alternative medicine in persons with common mental disorders. *Acta Psychiatrica Scandinavica*, 118, 73–80. doi:10.1111/j.1600-0447.2008.01192.x
- White, K. P. (2000). Psychology and complementary and alternative medicine. *Professional Psychology: Research and Practice*, 31(6), 671–681. doi:10.1037/10735-7028.31.6.671

- White, K. P. (2009). What psychologists should know about homeopathy, nutrition, and botanical medicine. *Professional Psychology: Research and Practice, 40*(6), 633–640. doi:[10.1037/a0016051](https://doi.org/10.1037/a0016051)
- Woolery, A., Myers, H., Sternlieb, B., & Zeltzer, L. (2004). A yoga intervention for young adults with elevated symptoms of depression. *Alternative Therapies in Health and Medicine, 10*(2), 60–63.
- Young, S. N. (2007). How to increase serotonin in the human brain without drugs. *Journal of Psychiatry & Neuroscience, 32*(6), 394–399.

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