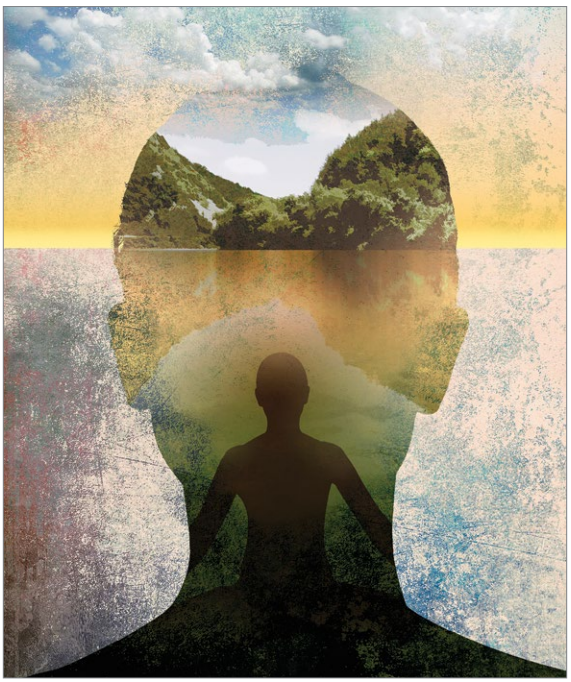
Current PSYCHIATRY

Complementary treatments for anxiety: Beyond pharmacotherapy and psychotherapy

Evidence from select RCTs suggests some benefits when used as adjunctive therapies



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Anxiety disorders are the most common psychiatric illnesses in the United States, with a prevalence of nearly 29%.[1] These disorders typically are treated with pharmacotherapy, psychotherapy, or a combination of both. Pharmacotherapy for anxiety has evolved considerably during the last 30 years, but medications are not efficacious for or tolerated by all patients. For example, selective serotonin reuptake inhibitors, which are frequently used for treating anxiety, can cause sexual dysfunction,[2] weight gain,[2] drug interactions,[2] coagulopathies,[3] and gastrointestinal disturbances.[4] Psychotherapeutic techniques, such as cognitive behavioral therapy (CBT) and interpersonal therapy (IPT), are efficacious for mild to moderate anxiety.[5-7]

In addition to standard pharmacotherapy and psychotherapy, some evidence suggests that complementary therapies, such as yoga, massage, and relaxation techniques, may be beneficial as adjunctive treatments for anxiety. In placebo-controlled trials, several of these complementary therapies have been shown to decrease serum levels of the inflammatory biomarker cortisol. Anxiety is associated with inflammation,[8] so therapies that reduce inflammation may help reduce symptoms of anxiety. Here, we describe the results of select positive randomized controlled trials (RCTs) of several complementary interventions for anxiety that might be useful as adjunctive treatments to psychotherapy or pharmacotherapy.

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Disclosures
The authors report no financial relationships with any company whose products are mentioned in this article or with manufacturers of competing products.

Complementary anxiety therapies

Clinical Point

Postmenopausal women who practiced hatha yoga daily had significantly lower STAI scores

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A look at RCTs that measured both anxiety and cortisol

We searched PubMed, Google Scholar, and Scopus to identify RCTs of complementary nonpharmacologic and nonpsychotherapeutic therapies for anxiety published from January 2010 to May 2017. We included only studies that:

- blindly assessed anxiety levels through a validated instrument (the State-Trait Anxiety Inventory [STAI])[9]
- measured cortisol concentrations before and after treatment.

Evaluating both STAI scores and cortisol levels is useful because doing so gives insight into both the clinical and biological efficacy of the therapies. Studies were excluded if they employed a pharmacologic agent in addition to the approach being evaluated.

We identified 26 studies, of which 14 met the inclusion/exclusion criteria. These studies found beneficial effects for yoga, massage therapy, aromatherapy massage, pet therapy, Qigong, auricular acupressure, reiki touch therapy, acupuncture, music therapy, and relaxation techniques.

Yoga

Yoga has become increasingly popular in the Western world during the last 2 decades.[10] There are a variety of yoga practices; common forms include hatha yoga, power yoga, kripalu yoga, and forrest yoga.[11]

A study of 92 depressed pregnant women monitored the effects of 20 minutes of yoga once a week for 12 weeks.[12] Half of the women were randomly assigned to the yoga intervention, which consisted of standing, kneeling, and seated poses, and half were assigned to a social support discussion group. After 12 weeks, both groups had significant decreases in STAI scores. Both groups also had statistically significant decreases in salivary cortisol levels immediately after each session.[12]

Hatha yoga consists of a combination of postural exercises, breathing techniques, relaxation, and meditation. In a 12-week study of 88 postmenopausal women, those who practiced hatha yoga for 75 minutes a day had significantly lower STAI scores compared with women who exercised for 75 minutes a day and those who performed no physical activity.[13]

Massage therapy

Receiving as little as 15 minutes of back massage has proven to be beneficial for individuals with anxiety. In an RCT conducted in Turkey, 44 caregivers of patients with cancer were assigned to receive a back massage or to rest quietly in a room for 15 minutes once each day for 1 week.[14] By the end of the week, compared with those who quietly rested, those who received the back massage had a statistically significant reduction in serum cortisol levels and STAI scores.[14]

Aromatherapy massage

Aromatherapy is the use of essential oils from plants through distillation.[15] The scent of the oils is purported to provide medical benefits. More than 60 essential oils are used therapeutically, including rose, lavender, lemon, and orange.[16] These essential oils are frequently used in combination with a massage.

In South Korea, researchers investigated the effects of aromatherapy massage on 25 women who had children diagnosed with attention-deficit/hyperactivity disorder.[17] Women assigned to the treatment group received a 40-minute aromatherapy massage using mixed essential oils that contained lavender and geranium twice a week for 4 weeks. Women in the control group received no treatment. Compared with those in the control group, women who received the aromatherapy massages had a statistically significant decrease in STAI scores and salivary cortisol levels. Plasma cortisol was not significantly different between groups.[17]

Pet therapy

The psychological benefits of animal-assisted therapy were not evident until World War II, when dogs were used to cheer up injured soldiers.[18] Today, pet therapy has been used on many inpatient units.[19]

In a U.S. study, 48 healthy undergraduate students were assigned to a room with a dog, a room with a friend, or a room by

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themselves.[20] All participants were given the Trier Social Stress Test (TSST), a protocol that measures stress by having participants give a speech and perform mental arithmetic in front of an audience. The TSST is known to induce increases in cortisol levels. Although no differences in STAI scores were found among groups, students in the room with the dog had a lower spike in salivary cortisol after the TSST compared with participants who were in a room with a friend or in a room alone.[20]

Qigong

In Chinese medicine, Qi is known as a vital life force that flows through the body. The disruption of Qi is hypothesized to contribute to disease.[21]

Qigong is a medical therapy that focuses on uniting the body, breath, and mind to improve health.[21] It consists of rhythmic, choreographed movements used to position the body into postures believed to help direct Qi to specific areas in the body. Qigong also uses sound exercises, in which an individual creates certain syllables while breathing. Six syllables are used, each of which is believed to affect a certain organ.[21]

Korean researchers randomly assigned 32 healthy men to a Qigong training group or a sham Qigong control group.[22] Individuals in the training group performed 25 minutes of sound exercises, 20 minutes of meditation, and 15 minutes of movements. The control group learned the same movements as the experimental group, but without the conscious effort of moving Qi. After 3 sessions, those in the Qigong training group had significantly decreased STAI scores and serum cortisol levels compared with those in the sham group.[22]

In a different Korean study, researchers randomly assigned 50 participants with elevated distress levels to a Qigong training group or a waitlist control group in which participants called a trainer to describe stressful events.[23] After 4 weeks, participants in the Qigong group had significant decreases in STAI scores compared with the control group. However, there were no changes in salivary cortisol levels.[23]

Clinical Point

Qigong training significantly reduced STAI scores and cortisol levels in 32 healthy men

Auricular acupressure

Auricular acupressure involves applying pressure on certain portions of the auricle (outer ear) to alleviate pain and disease.[24] Similar to Qigong, auricular acupressure focuses on reestablishing Qi in the body. Researchers randomly assigned 80 post-caesarean section women in Taiwan to 5 days of auricular acupressure or usual care.[25] The women who received auricular acupressure had significantly lower STAI scores and serum cortisol levels compared with women who received routine care.[25]

Reiki touch therapy

Reiki touch therapy originated in Japan. In this therapy, healers apply a light touch or hover their hands above an individual's body to help direct energy.[26]

The effects of reiki touch therapy were recently evaluated in a U.S. study.[27] Researchers randomly assigned 37 patients with human immunodeficiency virus to an experimental group that received 30 minutes of reiki touch therapy plus music therapy 6 times a week for 10 weeks, or to a music therapy–only control group. Patients who received reiki touch therapy had a significant decrease in STAI scores. Patients in this group also had a statistically significant drop in salivary cortisol levels after the first week.[27]

Acupuncture

Acupuncture is the application of needles to specific areas on the body. Acupuncture has been proposed to activate pain receptors, thereby producing an analgesic response.[28]

Researchers in Brazil randomly assigned 57 lactating women with preterm infants to an experimental group that received acupuncture or to a control group that received sham acupuncture.[29] Treatment was administered at 5 points on the ear unilaterally for 5 minutes once a week for 16 months. Custom-made needles that did not actually puncture the skin were used in the sham group; a toothpick was used to create the sensation of needle perforations. STAI scores were reduced in both groups, although there was no statistically

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Complementary anxiety therapies

Clinical Point

Patients who listened to music during port catheter placement had significantly reduced STAI scores and serum cortisol levels

Table

Complementary treatments for anxiety: A look at select positive RCTs

Intervention	Representative study	Findings
Yoga	Field et al[12] (2013)	Reduced STAI scores and salivary cortisol levels in 92 depressed pregnant women who did 20 minutes of yoga poses once a week for 12 weeks
Hatha yoga	Jorge et al[13] (2016)	Reduced STAI scores in 88 postmenopausal women who did 75 minutes of hatha yoga once a day for 12 weeks
Massage therapy	Pinar et al[14] (2015)	Reduced STAI scores and cortisol levels in 44 caregivers of patients with cancer who received back massage for 15 minutes once a day for 1 week
Aromatherapy massage	Wu et al[17] (2014)	Reduced STAI scores and salivary cortisol levels (but not serum cortisol levels) in 25 mothers of children diagnosed with ADHD who received a massage with a mixed essential oil containing lavender and geranium twice a week for 4 weeks
Pet therapy	Polheber and Matchock[20] (2014)	Lower spike in salivary cortisol after the TSST in 48 college students assigned to a room with a dog, compared with participants in a room with a friend or in a room alone. No difference in STAI scores
Qigong	Lee et al[22] (2004)	Reduced STAI scores and serum cortisol levels in 32 men who received 3 sessions of Qigong training
Qigong	Hwang et al[23] (2013)	Reduced STAI scores in 50 patients with elevated distress levels who received 4 weeks of Qigong training. Salivary cortisol levels were not changed
Auricular acupressure	Kuo et al[25] (2016)	Reduced STAI scores and serum cortisol levels in 80 post-caesarean section women who received 5 days of auricular acupressure
Reiki touch therapy	Bremner et al[27] (2016)	Reduced STAI scores and salivary cortisol levels in 37 patients with HIV who received 30 minutes of reiki touch therapy 6 times a week for 10 weeks
Acupuncture	Haddad-Rodrigues et al[29] (2013)	Reduced STAI scores in 57 lactating women who received acupuncture once a week for 16 months; no significant difference in STAI scores between acupuncture and control groups
Music therapy	Zengin et al[30] (2013)	Reduced STAI scores and cortisol levels in 100 oncology patients who received music therapy while undergoing placement of a port catheter
Relaxation techniques	Urech et al[31] (2010)	Reduced STAI scores and salivary cortisol levels in 39 pregnant women after one 10-minute session of progressive muscle relaxation or guided imagery
Relaxation techniques	Galvin et al[33] (2006)	Reduced STAI scores in 15 older adults after participating in a 5-week relaxation response training program

ADHD: attention-deficit/hyperactivity disorder; HIV: human immunodeficiency virus; RCTs: randomized controlled trials; STAI: State-Trait Anxiety Inventory; TSST: Trier Social Stress Test

significant difference in scores between the acupuncture and sham groups.[29]

Music therapy

Music has been long believed to have beneficial psychological effects. In Turkey, researchers evaluated the effects of music therapy in 100 oncology patients who received port catheters.[30] Patients were randomly assigned to an experimental group that received music therapy throughout the procedure or to a control group that received normal care. Patients who listened to music during port catheter placement had significantly reduced STAI scores and serum cortisol levels compared with those in the control group.[30]

Relaxation techniques

A wide range of relaxation techniques are used for therapeutic purposes. In

Switzerland, researchers evaluated the anxiolytic effects of 10 minutes of progressive muscle relaxation and guided imagery in 39 pregnant women.[31] Women randomly assigned to progressive muscle relaxation were instructed to systematically tense and then release muscle groups throughout their body in sequential order. Women assigned to the guided imagery intervention were told to imagine a safe place and to think of someone who could confer security and reassurance. The remainder of the women were assigned to a control group, where they sat quietly without any formal instructions. Researchers found that each group had a decrease in STAI scores and salivary cortisol levels immediately after the intervention.[31]

The relaxation response was first described in 1975 by Herbert Benson, MD, as a deep meditative state characterized by a decrease in tension, heart rate, and breathing rate. Several techniques can induce this state, including hypnosis, progressive muscle relaxation, yoga, and transcendental meditation.[32] In a study of 15 healthy older adults (age 65 to 80), researchers randomly assigned participants to a relaxation response training group or to a control group.[33] The relaxation response training included meditation, imagery, and relaxation techniques. After 5 weeks, participants who received the relaxation response training had marginally significant decreases in STAI scores compared with those in the control group.[33]

Consider these therapies as adjuncts

Our review of select positive RCTs (***Table***[12-14,17,20,22,23,25,27,29-31,33]) suggests that some nonpharmacologic/nonpsychotherapeutic adjunctive interventions may have beneficial effects for patients who have anxiety. Several of the controlled studies we reviewed demonstrated that these interventions are superior to placebo. The reductions in both anxiety severity as measured by the STAI and cortisol levels suggests that some of these complementary therapies deserve a second look as useful adjuncts to established anxiety treatments.

Related Resources

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Bottom Line

A review of select randomized controlled trials suggests that some complementary therapies may be helpful as adjunctive therapy in patients with anxiety. These include yoga, massage therapy, aromatherapy massage, pet therapy, Qigong, auricular acupressure, reiki touch therapy, acupuncture, music therapy, and relaxation techniques.

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Relaxation response training produced marginally significant decreases in STAI scores

Complementary anxiety therapies

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