

A Practical Review of Mind-Body Medicine (MBM): Descriptions of Prevalent MBM Therapies, Indications, Contraindications, and Efficacy

Nicholas A Kerna^{1,2*}, Hilary M Holets^{3,4}, Abdullah Hafid⁵, Kevin D Pruitt⁶, ND Victor Carsrud⁷, Silile Ndhlovu⁸, Fernand Jean-Baptiste⁹, Sahalia Rashid¹⁰ and Uzoamaka Nwokorie¹¹

¹SMC–Medical Research, Thailand

²First InterHealth Group, Thailand

³Beverly Hills Wellness Surgical Institute, USA

⁴Orange Partners Surgicenter, USA

⁵Academy of Integrative Health and Medicine (AIHM), USA

⁶Kemet Medical Consultants, USA

⁷Lakeline Wellness Center, USA

⁸MyPainDoc PC, USA

⁹Department of Biological Sciences, Florida Atlantic University, USA

¹⁰All Saints University School of Medicine, Dominica

¹¹University of Washington, USA

***Corresponding Author:** Nicholas A Kerna, (mailing address) POB47 Phatphong, Suriwongse Road, Bangkok, Thailand 10500.

Contact: medpublab+drkerna@gmail.com.

Received: April 28, 2020; **Published:** May 31, 2021

DOI: 10.31080/ecpp.2021.10.00878

Abstract

At present, various types of mind-body medicine (MBM) interventions are employed. Some of the most prevalent methods include autogenic therapy, biofeedback, cognitive-behavioral therapy, guided imagery, hypnotherapy, meditation, relaxation techniques, spiritual dynamics, support groups, visualization, and yoga.

Arthritis, anxiety, bronchial asthma, cancer, cardiovascular disorders, conditions requiring neuromuscular rehabilitation, epilepsy, gastrointestinal disorders, headache, incontinence, insomnia, multiple sclerosis, and pain—in specific cases—responds favorably to distinct mind-body therapies (MBTs).

MBM considers the coherent functioning of the mind, body, and behavior a basic premise in recovering health. Thus, MBM emphasizes that behavioral, social, mental, spiritual, and emotional factors—when out of balance or in a disharmonious state—can adversely affect an individual's health, well-being, and quality of life.

Keen interest in this treatment approach was spawned during World War II, when, due to a drastic shortage of morphine, saline was injected into seriously wounded soldiers. Surprisingly, many saline-injected soldiers experienced pain relief—which hatched the term “placebo effect”. Nonetheless, it appears likely that actual physiological processes and mechanisms result from some, or perhaps all of the mind-body interventions described in this review. However, research explicitly confirming or explaining these purported beneficial effects is notably lacking.

When compared to most pharmaceutical and surgical interventions, MBTs are generally considered safe. Nevertheless, precautions must be observed. When other forms of medical treatment are essential, MBTs should not be used alone. This caution holds, especially in patients with heart disease, diabetes, and cancer. Patients seeking alternative forms of treatment should consult with an established mind-body medicine practitioner.

Regarding adolescent patients with post-traumatic stress disorder and sexual, physical, or emotional abuse, the application of hypnosis should be combined with treatment or oversight from a licensed, mental health professional. Pregnant women are discouraged from having a massage, as are patients with bleeding disorders, thrombocytopenia, and those taking anticoagulant medicines. Massage should not be applied to wounded areas.

Developing specific and evidence-based protocols for applying MBTs in specific conditions or in combination with currently accepted and applied medical procedures is considered a vital goal of future research in MBM. The biological pathways and system or cellular mechanisms of these mind-body interventions should be determined. If these mechanisms could be better understood and specific and evidence-based protocols determined, mind-body medicine will gain greater acceptance in the medical field and have more frequent application by medical practitioners to benefit the many needful patients.

Keywords: Arthritis; Emotional; Hypertension; Hypnosis; Meditation; Mental; Natural; Pain; Social; Spiritual

Abbreviations

ADHD: Attention-Deficit Hyperactivity Disorder; ASMP: Arthritis Self-Management Program; BSA: Biofeedback Society of America; CBT: Cognitive-Behavioral Therapy; EEG: Electroencephalograph; EMG: Electromyography; GI: Gastrointestinal; MBM: Mind-Body Medicine; MBT: Mind-Body Therapy; NSAIDs: Nonsteroidal Anti-inflammatory Drugs; PNI: Psychoneuroimmunology; PTSD: Post-Traumatic Stress Disorder; RCT: Randomized Controlled Trial; TCN: Traditional Chinese Medicine; TM: Transcendental Meditation

Introduction

Mind-body medicine (MBM) emphasizes communication among the mind, body, and behavior. MBM focuses on the significant ways in which behavioral, social, mental, spiritual, and emotional factors affect an individual's health. Mind-body interventions form a significant subset of complementary and alternative medicine [1].

The state of a patient's mind is an essential consideration in treating a disease. This concept has been adopted by Ayurveda and Traditional Chinese Medicine (TCM), dating back more than 2,000 years [1]. While the East traditional healing systems applied the principles of Ayurveda and TCM to treat diseases, medical advancements in the West during the 16th and 17th centuries led to a demarcation of spiritual or emotional aspects from the physical body. In 1920, Cannon highlighted the direct association between neuroendocrine responses and stress in animals [2]. In 1956, Selye described a connection between psychology, pathology, and physiology [3].

In 1975, Ader [4] elaborated on Selye's seminal research and demonstrated that the mind could modulate the immune system's functioning. In 1999, Part [5] recognized that neuropeptides are secreted by cells in response to mental stressors. Research in this novel field was called psychoneuroimmunology (PNI).

Davidson [6] from the University of Wisconsin further investigated these aspects. Davidson demonstrated the critical role of the mind in the overall well-being of an individual. This research was supplemented by Lazar [7], who studied structural differences in the brain between individuals with and without a history of meditation.

Mindfulness meditation through transpersonal psychology was introduced in the West in the 1970s [8]. Mindfulness as a meditation form became familiarized in the 1980s. In the late 20th century, James [9] focused on studying the science of the mind, which is responsible for health concerns and healing.

The certainty of belief was witnessed in the health care system during World War II. When morphine was in short supply, Beecher [10] discovered that the wounded soldiers reported pain relief with saline injections. This improvement with non-medication was termed the "placebo effect" and his further research demonstrated that about 35% of therapeutical efficacy was due to belief.

Psychological therapy is currently a predominant approach to heal emotional stress, behavioral dysfunction, and mood disorders. Mind-body therapy (MBT) is essential to identify an individual's ability to acquaint and care for the self. MBT focuses mainly on the acceptance of feelings in resolving ailments. The therapy views an illness not as a hindrance but as a prospect for growth and transformation for individuals in terms of their health [9].

Discussion

Types of mind-body medicine interventions

Currently, several types of MBM interventions are practiced. According to the national survey data, MBTs, such as biofeedback, guided imagery, hypnosis, and relaxation techniques, are widely followed in the United States [11]. The more notable and highly recommended MBM interventions are presented in the following sections.

Biofeedback

The application of biofeedback dates to the 1960s. This technique uses devices to help individuals gain awareness of biological functions, such as muscular activity and blood pressure, that cannot be observed without amplification. Thus, the physiological processes are converted to visual or auditory cues in the therapy. Participants are instructed to relax and interpret the imagery in order to modify their physiological activity. For example, in electromyographic biofeedback, patients with tension headaches, are provided with feedback on temperature or degree of tension in the frontalis muscle. Patients with migraine headaches are trained to warm their palms using feedback signal tones or sounds representing changes in temperature in that part of the body [11].

Guided imagery

Guided imagery is how the participant generates mental images with or without help from a practitioner. The mental images evoked using visualization or imaginary techniques are either sensory or emotional. These images are perceived to induce a psychophysiological relaxed state or discover subconscious refrains [12].

Hypnotherapy (hypnosis)

Although there is no precise definition for hypnosis, it is described as cultivating imagination under the conditions of altered consciousness state within a focused setting. Here, an individual is mainly absorbed into a specific image or idea intended at empowering physical or mental health [13].

In clinical hypnosis, therapeutic propositions are generated by the self to promote thoughts of healing and sense the mind-body connection, resulting in optimistic physical, emotional, and behavioral changes. Neuroscientists have recognized the effect of therapeutic suggestions on attention functions and related brain systems and their influence on physical and mental involvement through brain imaging [13].

Clinical hypnosis is well appreciated for its teachable managing skills that can be quickly learned. Moreover, it is safe, highly effective, and devoid of adverse effects when practiced under trained professionals. The altered state of awareness in adolescents is accomplished by visual imagery or progressive muscle relaxation. This core-creative process is similar to daydreaming and is used to gain focus and become engrossed to attain a hypnotic state [13].

In this technique, sensations and perceptions can be improved to prevent and regulate reflex actions, postpone satisfaction, use problem-solving approaches, and upsurge self-confidence, and reduce discomfort, anxiety, and stress [13].

Meditation (including mindfulness)

Meditation is a process of training the mind to focus and stay attentive in a non-analytical manner to avoid futile thoughts. Most of the meditation techniques have been developed within a spiritual or religious realm, aiming to improve the self, gain inspirational experience, and achieve spiritual development. The use of meditation as a medical intervention irrespective of an individual's religious or cultural background is a matter of contention [14].

Transcendental meditation (TM) [15] and mindfulness meditation are the two types of meditation techniques [16]. In TM, trainers reiterate a word or a phrase that is considered a mantra to silence internal mental dialogues. In mindfulness meditation, practitioners perceive or attend to feelings, such as emotions, perceptions, sensations, and thoughts, that arise momentarily in the arena of awareness.

Relaxation techniques

Relaxation techniques aim at inducing a hypoarousal or relaxed psychophysiological state. In certain patients, relaxation can help achieve relief from muscle tension or attain a sympathetic arousal state. The most projecting illustration of attaining a state of sympathetic arousal is Benson's relaxation response [17].

Cognitive-behavioral therapy

Of the traditional psychological interventions, cognitive-behavioral therapy (CBT) is the most prominent. It focuses on the importance of cognition in designing emotional experiences and claims that negative emotions, such as anxiety, depression, and anger, are the outcomes of defective or illogical thought processes [18].

Visualization

Visualization involves dynamic imagery to inspire behavioral, physiological, and attitudinal responses. Even slight deliberate imagery of thoughts stimulates the brain to release neurotransmitters to the associated neural pathways [12].

Much could be written on CBT; however, a treatise or lengthier description is well beyond the scope of this review, and much on this topic is readily available.

Autogenic therapy

Autogenic therapy comprises mild exercises of body consciousness and relaxation, involving the progressive use of the limbs and viscera. The goal of this therapy is to enhance relaxation and thereby reduce stress. The technique has been applied to decrease psychological stress in women with inexplicable fertility issues. It is also known to reduce the levels of the biochemical stress marker prolactin [19].

Support groups

Involvement in group activities that endorse a feeling of being understood, bonding, longevity, stress relief, belonging, learning, and self-expression can reduce feelings of isolation and anxiety [20].

Yoga

Yoga is an ancient, non-religious approach developed in India, comprising meditation as the focal point and the practice of mindfulness and breathing exercises. Health benefits from practicing yoga are well recognized. Yoga is known to normalize blood pressure, respiratory rate, heart rate, auditory and visual reaction times, galvanic skin response, breath-holding time, intraocular pressure, and glucose levels to progressively attain good health [21].

Specific applications of MBTs in MBM

Biofeedback

Biofeedback is employed as a non-pharmacological therapeutic approach in several diseases. Biofeedback is the most commonly applied non-pharmacological therapy for headaches. The Biofeedback Society of America (BSA) has identified frontalis electromyography (EMG) biofeedback as an excellent treatment option for relieving muscle contractions noted in headaches. For vascular or migraine headaches, thermal biofeedback, thermal biofeedback with autogenic training, or biofeedback training for regulating the vasomotor activity of the external temporal artery are ordinarily used. Research has indicated 40–70% improvement following the use of biofeedback therapy [22].

In patients with hypertension, the EMG biofeedback relaxation technique is understood to lower systolic blood pressure by > 20 mmHg and diastolic blood pressure by 10–15 mmHg [22]. Several researchers have reported successful outcomes in patients with cardiac arrhythmias, such as paroxysmal atrial tachycardia, premature ventricular contractions, sinus tachycardia, and atrial fibrillation [22]. Patients with Raynaud disease have had fewer episodes of vasospastic attacks after treatment with temperature biofeedback either alone or in combination with autogenic training [22].

EMG biofeedback alone or in combination with relaxation therapy appears to be effective for a few conditions requiring neuromuscular rehabilitation, such as spasmodic torticollis. In this therapy, patients are trained first to relax the spasm, followed by increasing the EMG activity in the muscle group that is atrophied and situated collateral to the spasm [22].

In addition, biofeedback therapy has been beneficial in neuromuscular illnesses, such as Huntington chorea, hemiparesis due to head trauma or cerebral palsy, Parkinson's disease, muscular atrophy secondary to surgery, tremors, flexor tendon injury of the hands, and spinal cord injuries [22].

Biofeedback therapy is the most accepted treatment for gastrointestinal (GI) disorders, including fecal incontinence due to diminished rectal distension perception or sphincter ineffectiveness, inflammatory bowel disease, peptic ulcer, and irritable bowel syndrome [22].

Electroencephalographic (EEG) biofeedback has also been applied in treating epilepsy, insomnia, and bronchial asthma. Most of the neural disorders are characterized by tension and anxiety, which eventually manifest as somatic ailments, such as body ache and headache. Biofeedback therapy provides considerable benefits in alleviating these disorders [22].

Guided imagery

In the clinical setting, guided imagery has been reported to provide significant benefits in patients with psychological and physical disorders, such as attention-deficit hyperactivity disorder (ADHD), depression, insomnia, and anxiety. This improvement was attributed to the short-term mindfulness training that patients received for two months [23].

Hypnosis

Health care providers can use clinical hypnosis to enable adolescents with coping skills to manage diverse health conditions, such as phobia, anger, recurrent abdominal pain, chronic headache, sleep disorder, depression, family stressor, enuresis, anxiety, bereavement, and grief [24].

Clinical vignettes were shared with adolescents to reinforce the benefits of hypnosis—clinical hypnosis functions at various levels, including emotions, physiology, cognition, behavior, and attention. The practice of hypnosis by adolescents with coping skills helps achieve inner well-being in terms of attention, performance, thoughts, and emotions [24].

Clinical hypnosis can be performed in adolescents only if they are approachable to hypnotic propositions; the disease is treatable through this technique; the relationship between the health care provider and the patient is good, and no iatrogenic maltreatment is expected.

Self-regulation therapies or clinical hypnosis are also beneficial when added to a multi-modal treatment plan for adolescents with ADHD. Hypnosis helps silence their mind, slow their thoughts, and stay focused to overcome anger or frustration [25].

Meditation

TM was the first known type of meditation scientifically proven to benefit several diseases. It promotes performance and focus, and reduces tension. Long-term practice of TM has even been shown to slow the aging process. TM also helps prevent and cure disorders of the respiratory, endocrine, metabolic, central nervous, immune, and cardiovascular systems [26].

Unlike medical meditation, which uses a particular technique for a specific endocrine gland, TM effectively regulates the hormonal secretion of various endocrine glands [26].

Relaxation techniques

The benefits of applying relaxation techniques have been noted in different population groups and for various indications. Relaxation techniques may be applied to reduce pain or perception of pain, promote sleep, combat fatigue, reduce anxiety, manage stress, enhance the effectiveness of pain relief measures, reduce or prevent the physiological and psychological effects of stress, slow the heartbeat, increase suggestibility, decrease blood pressure, and energize and alleviate muscle tension. It can also serve as a coping skill under various life situations [27].

Efficacy of MBM in specific conditions

Arthritis

Clinical studies have investigated the effectiveness of multi-modal MBM in treating fibromyalgia, rheumatoid arthritis, and osteoarthritis. Typically, multi-modal MBMs involve a combination of biofeedback therapy, cognitive strategies, education, and relaxation. Narrative reviews have proposed that the Arthritis Self-Management Program (ASMP) may be quite effective in arthritis management [28]. This community-based program involves cognitive restructuring, exercises to reduce pain and distress, problem-solving, and relaxation techniques.

In a study involving 501 patients (osteoarthritis, 68%; rheumatoid arthritis, 15%; other forms of arthritis, 17%), the intervention helped reduce pain that was preserved for up to 4 years. Moreover, visits to physicians were reduced by 40% [29].

A meta-analysis in 1996 [30] compared the effect sizes between patients receiving the psychoeducational intervention (including the ASMP) and those receiving nonsteroidal anti-inflammatory drugs (NSAIDs) in randomized trials. Overall, the effect sizes were smaller for the MBM (0.34 for the tender joint count in rheumatoid arthritis, 0.17 for pain, and 0.03 for functional disability) than NSAIDs.

In another meta-analysis [31] involving 25 randomized trials, MBM demonstrated small but statistically significant effect sizes for disability (0.36), depression (0.17), and pain (0.22) in patients with rheumatoid arthritis.

Pain

Results regarding the efficacy of relaxation therapy alone for treating chronic and acute pain have been inconclusive. Although the 1996 National Institute of Health consensus panel stated the presence of solid evidence for the efficacy of relaxation techniques in the treatment of chronic pain [32], a systematic review of nine randomized trials [33] demonstrated positive treatment effects in only three studies and established that the evidence for the application of relaxation techniques alone for treating chronic pain is inadequate.

Similarly, a systematic review involving randomized controlled trials (RCTs) investigating the use of relaxation for managing acute pain [34] concluded that data were inconclusive (“weak evidence”) to recommend the use of these therapies.

A Cochrane review evaluated the efficacy of MBMs to treat chronic low back pain, involving 20 RCTs [35]. The interventions were grouped into operant, cognitive, and respondent. The authors confirmed clear evidence for the efficacy of MBM compared to wait-list controls or usual medical care in reducing pain intensity.

Headache

A 1990 meta-analysis involving 34 trials evaluated the efficacy of biofeedback and relaxation therapy and compared it with 25 trials with drug therapy to treat recurrent migraine headaches [36]. Surprisingly, both methods yielded comparable results. A narrative review determined that a combination of thermal biofeedback and relaxation training is a preferred behavioral intervention for treating recurrent migraine disorder [37]. A study involving tricyclic antidepressants compared to stress management training for treating patients with chronic tension-type headaches demonstrated comparable results [38].

Cancer

Results from several studies involving heterogeneous groups of patients with cancer indicated that MBMs could help cope with the disease and enhance mood and quality of life [39]. In addition, MBM can ameliorate disease- and treatment-associated symptoms, such as nausea and vomiting induced by chemotherapy [40], body pain [41], and physiological changes [42].

A narrative review involving 54 studies evaluated the efficacy of behavioral interventions (contingency management, hypnosis, imagery, and relaxation) in coping with treatment-related adverse effects in patients with cancer [43]. The review concluded that the interventions were effective in reducing nausea and vomiting, and managing acute pain related to treatment procedures. The severity of chronic pain, nausea, and vomiting post-chemotherapy was considered lesser after behavioral interventions. However, studies propose that MBMs can modify several immunity parameters in patients with cancer [44].

Results of three RCTs investigating the survival effect [45–47] were statistically significant. In one of these trials [46], women with metastatic breast cancer who received 1-year weekly support along with hypnosis demonstrated significant variances in survival rates at the 10-year follow-up. Despite the positive outcomes, results obtained from four other RCTs [48–51] were unsuccessful in demonstrating the survival effect from these interventions.

Incontinence disorders

Per the 1996 Agency for Health Care Policy and Research clinical practice guidelines [52], biofeedback-assisted muscle retraining appears to be effective in treating incontinence disorders. A systematic review [53] described that biofeedback therapy was not synergistic to pelvic floor exercises in treating women with urinary incontinence. However, several studies have suggested the efficacy of biofeedback therapy in urinary incontinence. Research also proposes that the therapy has the potential to treat patients with passive, urge fecal incontinence [54], impaired fecal continence post obstetric trauma [55], and constipation [56].

Cardiovascular diseases

There is extensive evidence regarding the effectiveness of MBMs in treating coronary artery diseases. A meta-analysis of 23 RCTs [57] revealed that at the 2-year follow-up, the addition of psychosocial treatment to the standard cardiac rehabilitation caused a reduction of 46% in nonfatal cardiac recurrences and 41% in all-cause mortality.

Another meta-analysis [58]—evaluating 37 studies for the effectiveness of psychoeducational interventions—found a 29% decrease in myocardial infarction recurrence and 34% decrease in cardiac mortality. Importantly, positive effects on blood pressure, dietary and exercise habits, cholesterol, weight, and smoking were noted.

Multiple sclerosis

Research on the efficacy of MBMs in treating multiple sclerosis has been reported. One of the RCTs involving 69 participants, practicing yoga for six months, significantly decreased fatigue in the study group compared to the wait-list control group [59].

Epilepsy

One uncontrolled clinical study consisting of 25 patients receiving 28 biofeedback sessions of 1-h, EEG revealed that six patients were free of seizures after one year. However, data obtained from a controlled trial that employed the same methodology were less optimistic and challenging to interpret. An RCT of 18 patients with drug-refractory epilepsy revealed a reduction in seizure frequency in those treated with electrodermal activity biofeedback compared to subjects treated with sham biofeedback [60].

Precautions regarding MBM and MBT

MBM approaches are considered safe compared to most medical and surgical interventions for several diseases. However, MBM should not be used alone when other therapeutic care is essential, predominantly for chronic conditions like heart disease, diabetes, and cancer. Patients should seek treatment from consistent and well-trained MBM practitioners [47].

Caution is indicated in certain types of MBM practices, such as hypnosis in adolescents with PTSD and sexual, physical, or emotional abuse. In these patients, care synchronization with a skilled mental health professional is strongly advised [13].

Massage therapy seems to have lower risks when performed by a trained professional. However, massage practitioners should practice precautions while serving patients with specific health conditions. For instance, massage therapy is not advised for pregnant women. Moreover, patients with bleeding disorders, or thrombocytopenia, and those receiving anticoagulant medicines must avoid undergoing powerful and deep tissue massage. Massage should be wholly avoided in wound areas [27].

Adverse effects of MBM and MBT

MBM practices were likely born in prehistoric cultures to improve physical, mental, and spiritual well-being. Attention to their use in therapeutics increased from cumulative awareness of their beneficial potential, the requirement for economic modes of treatment, and lower risks of adverse effects than pharmacological or other conventional interventions.

Although it may seem evident that MBM has a favorable risk-benefit ratio, only one study precisely delineated safety in terms of adverse events [59].

Future developments in and applications of MBM

Categorizing MBMs that demonstrate clear physiological or clinical advantages with suitable biomarkers can help modify the existing techniques to attain greater efficiency, reduced time, and targeted treatment. Additionally, MBMs can be applied as non-invasive probes to discover vital neurophysiological processes and anatomic systems through brain imaging techniques. Knowledge of physiological modifications, clinical advantages, adverse effects, and contraindications of MBM will help in adding these interventions to mainstream treatment regimes [11]. MBMs seem to be beneficial for patients coping with chronic illnesses and those requiring palliative care [11].

Future research focusing on basic MBM procedures and individual variations in responses may provide new insights to improve efficiency and tailor these inventions to individual patient needs. Also, developing specific and evidence-based protocols for applying MBTs in specific conditions or in combination with currently accepted and applied medical procedures is vital for practical application and universal recognition.

Conclusion

Mind-body medicine emphasizes harmony among the mind, body, and behavior, focusing on ways behavioral, social, mental, spiritual, and emotional factors adversely affect an individual's health. Although there seem to be determinable recovery mechanisms at play in MBTs, not just "mind over matter" or placebo effects, serious interest in this area of treatment was surprisingly brought to the attention of established medicine during World War II.

At that time, when saline was injected into seriously wounded soldiers (due to a drastic shortage of morphine), many of the saline recipients reported pain relief. Over time, this placebo effect was determined to account for about 35% of therapeutical efficacy throughout medicine. Still, there seems likely to be some actual physiological processes and mechanisms (not solely placebo effects) involved with some or perhaps all of the mind-body interventions described in this review.

Numerous types of MBM interventions are currently practiced, such as autogenic therapy, biofeedback, cognitive-behavioral therapy, guided imagery, hypnotherapy, meditation, relaxation techniques, spiritual dynamics, support groups, visualization, and yoga.

Specific conditions that have responded favorably in some instances to mind-body treatments are arthritis, anxiety, bronchial asthma, cancer, cardiovascular disorders, conditions requiring neuromuscular rehabilitation, epilepsy, gastrointestinal disorders, headache, incontinence, insomnia, multiple sclerosis, and pain.

However, certain precautions must be considered regarding mind-body therapies. Although these therapies are generally considered safe (compared to most pharmaceutical and surgical interventions), MBTs should not be used alone when other forms of treatment are essential, particularly in heart disease, diabetes, and cancer. Also, patients considering non-mainstream (alternative) forms of treatment should consult a well-trained mind-body medicine practitioner.

Also, the use of hypnosis in adolescents with post-traumatic stress disorder and sexual, physical, or emotional abuse should be combined with treatment or oversight from a licensed mental health professional. Moreover, massage therapy is discouraged for pregnant women and patients with bleeding disorders, thrombocytopenia, and those taking anticoagulant medicines. Massage should be avoided entirely in wound areas.

Although mind-body therapies seem innocuous with a favorable risk-benefit ratio, research specifically confirming such is near-absent. Future research in MBM should focus on developing specific and evidence-based protocols for applying MBTs in specific conditions or in combination with currently accepted and applied medical procedures. Also, research should uncover the biological pathways and system or cellular mechanisms that are fundamental to the purported benefits. If specific and evidence-based protocols can be established to utilize MBTs in specific conditions or in combination with currently accepted and applied medical procedures, these therapies—some of which date to antiquity—can take their place in contemporary medicine.

Conflict of Interest Statement

The authors declare that this paper was written in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest.

Supplementary Note

Regarding “spiritual dynamics”: Some evidence-based studies have indicated that meditation and, for believers of religion, prayer helps calm a troubled mind—more so in controlling fear and anxiety than in curing them. For Bible followers, and in some other religions, fear (the cause of the psychological condition) can be “driven out”—a practice historically known as exorcism or the process of expelling evil spirits or demons from a person’s mind or body.

In an article, Joel R. Sanford of Western Michigan University, *Facing Our Demons: Psychiatric Perspectives on Exorcism Rituals*, states: “There are some therapists who include exorcism in therapies.” Mr. Sanford goes on to caution: “Of course, if future studies demonstrate a significant risk associated with patients undergoing exorcisms, this would suggest psychiatrists should be aware of the potential for patients to pursue exorcism, and they should advise against it on these grounds” [61].

Moreover, it is noted that a mental health professional should be consulted if a patient intends to explore exorcism as a cure for a physical or psychological condition. The individual should also seek a spiritual deliverance minister for guidance. Do not abruptly stop any medication or medical treatment without the consent of a licensed medical professional.

References

1. Barnes PM., *et al.* “Complementary and alternative medicine use among adults: United States, 2002”. *Seminars in Integrative Medicine* 2.2 (2004): 54-71. <https://pubmed.ncbi.nlm.nih.gov/15188733/>
2. Cannon WB. “The Wisdom of the Body. Norton and Co (1967).
3. Selye H. “The Stress of Life. Book v: Implications and Applications”. New York, Toronto, London, McGraw-Hill Book Co (1956).

4. Ader R and Cohen N. "Behaviorally Conditioned Immunosuppression". *Psychosomatic Medicine* 37.4 (1975): 333-340. <https://pubmed.ncbi.nlm.nih.gov/7063864/>
5. Pert CB. "Molecules of Emotion: The Science behind Mind-Body Medicine". Scribner (1999).
6. Davidson RJ, *et al.* "Alterations in Brain and Immune Function Produced by Mindfulness Meditation". *Psychosomatic Medicine* 65.4 (2003): 564-570. <https://pubmed.ncbi.nlm.nih.gov/12883106/>
7. Lazar SW, *et al.* "Meditation experience is associated with increased cortical thickness". *Neuroreport* 16.17 (2005): 1893-1897. <https://pubmed.ncbi.nlm.nih.gov/16272874/>
8. Goleman D. "Meditation as meta-therapy: Hypotheses toward a proposed fifth state of consciousness". *Journal of Transpersonal Psychology* 3.1 (1971): 1-25. <https://psycnet.apa.org/record/1972-03096-001>
9. James W. "The Principles of Psychology". New York Cosimo Classics 1 (2007).
10. Beecher HK. "Measurement of Subjective Responses". Oxford University Press (1959).
11. Astin JA, *et al.* "Mind-Body Medicine: State of the Science, Implications for Practice". *The Journal of the American Board of Family Medicine* 16.2 (2003): 131-147. <https://pubmed.ncbi.nlm.nih.gov/12665179/>
12. Rice BL. "Mind-Body Interventions". *Diabetes Spectrum* 14.4 (2001): 213-217. <https://spectrum.diabetesjournals.org/content/14/4/213>
13. Raz A. "Does Neuroimaging of Suggestion Elucidate Hypnotic Trance?" *International Journal of Clinical and Experimental Hypnosis* 59.3 (2011): 363-377. <https://www.tandfonline.com/doi/abs/10.1080/00207144.2011.570682>
14. Kabat-Zinn J. "Comparative and Psychological Study on Meditation". Eburon (1996).
15. Alexander CN, *et al.* "The effects of transcendental meditation Symposium: Lifestyle changes in the prevention and treatment of disease (1992 compared to other methods of relaxation and meditation in reducing risk factors, morbidity, and mortality. CIANS-ISBM Satellite Conference, Hannover, Germany)". *Homeostasis in Health and Disease* 35 (1994): 243-263.
16. Olendzki A. "Mindfulness and Meditation". *Clinical Handbook of Mindfulness* (2009): 37-44. https://www.researchgate.net/publication/226037185_Mindfulness_and_Meditation
17. Hellman CJC, *et al.* "A Study of the Effectiveness of Two Group Behavioral Medicine Interventions for Patients with Psychosomatic Complaints". *Behavioral Medicine* 16.4 (1990): 165-173. <https://pubmed.ncbi.nlm.nih.gov/2271802/>
18. Beck AT. "Cognitive Therapy and the Emotional Disorders". *Penguin* (1976). <https://psycnet.apa.org/record/1976-28303-000>
19. Harrison RF, *et al.* "Stress and fertility: some modalities of investigation and treatment in couples with unexplained infertility in Dublin". *International Journal of Fertility* 31.2 (1986): 153-159. <https://pubmed.ncbi.nlm.nih.gov/2875038/>
20. Spiegel D. "Group Support for Patients With Metastatic Cancer". *Archives of General Psychiatry* 38.5 (1981): 527. <https://pubmed.ncbi.nlm.nih.gov/7235853/>
21. Ospina MB, *et al.* "Meditation Practices for Health: State of the Research (AHRQ)". *Evidence Report/Technology Assessment* (2007): 1-263. <https://pubmed.ncbi.nlm.nih.gov/17764203/>
22. Blumenthal JA. "Relaxation therapies and biofeedback: Applications in Medical Practice". *Psychotherapy: Theory, Research, Practice, Training* 22.3 (1985): 516-530. <https://psycnet.apa.org/record/1987-11101-001>
23. Manzanique JM, *et al.* "Psychobiological modulation in anxious and depressed patients after a mindfulness meditation programme: a pilot study". *Stress and Health* 27.3 (2010): 216-222. <https://onlinelibrary.wiley.com/doi/abs/10.1002/smi.1334>

24. Bell MA and Deater-Deckard K. "Biological Systems and the Development of Self-Regulation: Integrating Behavior, Genetics, and Psychophysiology". *Journal of Developmental and Behavioral Pediatrics* 28.5 (2007): 409-420. <https://pubmed.ncbi.nlm.nih.gov/18049327/>
25. Bögels S., *et al.* "Mindfulness Training for Adolescents with Externalizing Disorders and their Parents". *Behavioural and Cognitive Psychotherapy* 36.2 (2008): 193-209. <https://psycnet.apa.org/record/2008-15978-005>
26. Barnes V and Orme-Johnson D. "Clinical and Pre-clinical Applications of the Transcendental Meditation Program® in the Prevention and Treatment of Essential Hypertension and Cardiovascular Disease in Youth and Adults". *Current Hypertension Reviews* 2.3 (2006): 207-218. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289096/>
27. Mind-Body Practices: An Overview | BrainLine". Brain Line (2017).
28. Lorig K and Holman H. "Arthritis Self-Management Studies: A Twelve-Year Review". *Health Education Quarterly* 20.11 (1993): 17-28. <https://pubmed.ncbi.nlm.nih.gov/8444622/>
29. Lorig KR., *et al.* "Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs". *Arthritis and Rheumatism* 36.4 (1993): 439-446. <https://onlinelibrary.wiley.com/doi/10.1002/art.1780360403>
30. Superio-Cabuslay E., *et al.* "Patient education interventions in osteoarthritis and rheumatoid arthritis: A meta-analytic comparison with nonsteroidal antiinflammatory drug treatment". *Arthritis Care and Research* 9.4 (1996): 292-301. <https://pubmed.ncbi.nlm.nih.gov/8997918/>
31. Astin JA., *et al.* "Psychological interventions for rheumatoid arthritis: A meta-analysis of randomized controlled trials". *Arthritis and Rheumatism* 47.3 (2002): 291-302. <https://pubmed.ncbi.nlm.nih.gov/12115160/>
32. Integration of Behavioral and Relaxation Approaches Into the Treatment of Chronic Pain and Insomnia". *The Journal of the American Medical Association* 276.4 (1996): 313. <https://pubmed.ncbi.nlm.nih.gov/8656544/>
33. Carroll D and Seers K. "Relaxation for the relief of chronic pain: a systematic review". *Journal of Orthopaedic Nursing* 2.1 (1998): 55. <https://pubmed.ncbi.nlm.nih.gov/9543032/>
34. Seers K and Carroll D. "Relaxation techniques for acute pain management: a systematic review". *Journal of Orthopaedic Nursing* 2.1 (1998): 55-56. <https://pubmed.ncbi.nlm.nih.gov/9543031/>
35. Van Tulder MW., *et al.* "Behavioral Treatment for Chronic Low Back Pain". *Spine* 26.3 (2001): 270-281. <https://pubmed.ncbi.nlm.nih.gov/20614428/>
36. Holroyd KA and Penzien DB. "Pharmacological versus non-pharmacological prophylaxis of recurrent migraine headache: a meta-analytic review of clinical trials". *Pain* 42.1 (1990): 1-13. <https://pubmed.ncbi.nlm.nih.gov/2146583/>
37. Holroyd KA and Penzien DB. "Psychosocial Interventions in the Management of Recurrent Headache Disorders 1: Overview and Effectiveness". *Behavioral Medicine* 20.2 (1994): 53-63. <https://pubmed.ncbi.nlm.nih.gov/7803937/>
38. Holroyd KA., *et al.* "Management of Chronic Tension-Type Headache With Tricyclic Antidepressant Medication, Stress Management Therapy, and Their Combination". *The Journal of the American Medical Association* 285.17 (2001): 2208. <https://pubmed.ncbi.nlm.nih.gov/11325322/>
39. Classen C., *et al.* "Supportive-Expressive Group Therapy and Distress in Patients With Metastatic Breast Cancer". *Archives of General Psychiatry* 58.5 (2001): 494. <https://pubmed.ncbi.nlm.nih.gov/11343530/>
40. Burish TG and Jenkins RA. "Effectiveness of biofeedback and relaxation training in reducing the side effects of cancer chemotherapy". *Health Psychology* 11.1 (1992): 17-23. <https://psycnet.apa.org/record/1992-28534-001>
41. Spiegel D and Bloom JR. "Group therapy and hypnosis reduce metastatic breast carcinoma pain". *Pain* 22.2 (1985): 215-216. <https://pubmed.ncbi.nlm.nih.gov/6622622/>

42. Berglund G., *et al.* "A randomized study of a rehabilitation program for cancer patients: The "starting again" group". *Psycho-Oncology* 3.2 (1994): 109-120. <https://onlinelibrary.wiley.com/doi/abs/10.1002/pon.2960030205>
43. Redd WH. "Behavioral Intervention for Cancer Treatment Side Effects". *Acta Oncologica* 33.2 (1994): 113-117. <https://pubmed.ncbi.nlm.nih.gov/11390531/>
44. Gruber BL., *et al.* "Immunological responses of breast cancer patients to behavioral interventions". *Biofeedback and Self-Regulation* 18.1 (1993): 1-22. <https://pubmed.ncbi.nlm.nih.gov/8448236/>
45. Fawzy FI. "Malignant Melanoma". *Archives of General Psychiatry* 50.9 (1993): 681.
46. Spiegel D., *et al.* "Effect Of Psychosocial Treatment On Survival Of Patients With Metastatic Breast Cancer". *The Lancet* 334.8668 (1989): 888-891. <https://www.sciencedirect.com/science/article/abs/pii/S0140673689915511>
47. Richardson JL., *et al.* "The effect of compliance with treatment on survival among patients with hematologic malignancies". *Journal of Clinical Oncology* 8.2 (1990): 356-364. <https://pubmed.ncbi.nlm.nih.gov/2299375/>
48. Goodwin PJ., *et al.* "The effect of group psychosocial support on survival in metastatic breast cancer". *The New England Journal of Medicine* 345.24 (2001): 1719-1726. <https://pubmed.ncbi.nlm.nih.gov/11742045/>
49. Illyckyj A., *et al.* "A randomized controlled trial of psychotherapeutic intervention in cancer patients". *Annals of the Royal College of Surgeons of England* 27 (1994): 93-96.
50. Cunningham AJ., *et al.* "A randomized controlled trial of the effects of group psychological therapy on survival in women with metastatic breast cancer". *Psycho-Oncology* 7.6 (1998): 508-517. <https://pubmed.ncbi.nlm.nih.gov/9885092/>
51. Linn MW., *et al.* "Effects of counseling for late stage cancer patients". *Cancer* 49.5 (1982): 1048-1055. <https://pubmed.ncbi.nlm.nih.gov/7059922/>
52. Fantl JA., *et al.* "Managing Acute and Chronic Urinary Incontinence". *Journal of the American Academy of Nurse Practitioners* 8.8 (1996): 390-403. <https://pubmed.ncbi.nlm.nih.gov/8857788/>
53. Berghmans Hendriks BO., *et al.* "Conservative treatment of stress urinary incontinence in women: a systematic review of randomized clinical trials". *BJU International* 82.2 (1998): 181-191. <https://pubmed.ncbi.nlm.nih.gov/9722751/>
54. Glia A., *et al.* "Biofeedback training in patients with fecal incontinence". *Diseases of the Colon and Rectum* 41.3 (1998): 359-364. <https://pubmed.ncbi.nlm.nih.gov/9514433/>
55. Fynes MM., *et al.* "A prospective, randomized study comparing the effect of augmented biofeedback with sensory biofeedback alone on fecal incontinence after obstetric trauma". *Diseases of the Colon and Rectum* 42.6 (1999): 753-758. <https://pubmed.ncbi.nlm.nih.gov/10378599/>
56. Chiotakakou-Faliakou E., *et al.* "Biofeedback provides long term benefit for patients with intractable, slow and normal transit constipation". *Gut* 42.4 (1998): 517-521. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1727071/>
57. Linden W. "Psychosocial Interventions for Patients With Coronary Artery Disease". *Archives of Internal Medicine* 156.7 (1996): 745. <https://pubmed.ncbi.nlm.nih.gov/8615707/>
58. Dusseldorp E., *et al.* "A meta-analysis of psychoeducational programs for coronary heart disease patients". *Health Psychology* 18.5 (1999): 506-519. <https://pubmed.ncbi.nlm.nih.gov/10519467/>
59. Oken BS., *et al.* "Randomized controlled trial of yoga and exercise in multiple sclerosis". *Neurology* 62.11 (2004): 2058-2064. <https://n.neurology.org/content/62/11/2058>

60. Wahbeh H., *et al.* "Mind-body interventions: Applications in neurology". *Neurology* 270.24 (2008): 2321-2328. <https://pubmed.ncbi.nlm.nih.gov/18541886/>
61. Sanford Joel R. "Facing Our Demons: Psychiatric Perspectives on Exorcism Rituals". *The Hilltop Review* 8.2 (2016): 16. <https://scholarworks.wmich.edu/hilltopreview/vol8/iss2/16/>

Volume 10 Issue 6 June 2021

©2021. All rights reserved by Nicholas A Kerna., *et al.*