



Full Length Research Paper

The Mind -Body Medicine; A New Therapeutic Clinical Approach for Better Health and Quality Life to Human Beings

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Abstract

This research paper endeavors to conceptualize the roles of mind-body medicine for offering disease free and quality life to human beings. It is also ventured to evaluate the quality of mind-body medicine and its positive effects on various body parts of human body in disease conditions. We have surveyed the available literature globally to gather and evaluate the evidences for mind-body impacts on body functions. Techniques like relaxation trainings, hypnosis, art therapy, psychotherapy, touch therapy, biodynamic analysis, meditation; deep breathing, music, singing, dancing, walking, reading, writing, sculpturing, painting, trekking, rafting and camping, swimming etc. are known to support the suppressed body and mind conditions by normalizing and revitalizing the body physiology. Natural products and natural way of life do account much for the better health and quality life. Relaxation practices provide the strongest scientific evidence of mind-body medicine. The studies performed on mind-body interventions, in relation to other chronic illnesses, have shown that the symptoms of depression are minimized and immune responses are positively regulated by the mind-body effects through relaxation practices. Further, these medications also promote resilience in our other chronic illnesses. Psychological stressors including post stroke depression, post stroke anxiety and post-traumatic stress disorder are highly prevalent in stroke survivors. Its clinical management mainly focuses on motor disability, speech and language deficits and cognitive dysfunction ignoring largely the psychological stressors. This article further aims to collect evidences related to the effects of mind-body interventions on psychological stressors, quality of life and biological outcomes for stroke survivors. The extensive literature review made here, on several aspects of researches, enables for carrying out standardization and clinical trials on mind-body medicine. Similarly, Immunoglobulin A demonstrates the best scientific evidence for positive effects of mind-body medicine on human health. Research on meditation has already gained immense significance and is the most favored clinical field of heart and brain research. There are lots of challenges involved in meditation research including the diverse nature of meditation techniques, its implementation and personal discrepancies, with deep rooted genetic relations, across the meditation practitioners. The identification of difference between these meditation techniques and placebo effect require special attention.

Keywords: *Mind-body medicine, Human diseases, standardization and clinical trial of mind-body medicine, Quality life.*

Introduction

The concept of mind contributing synergistically with the healing approaches of traditional Chinese and Ayurvedic medicine, in treating several human ailments, dates back to more than 2000 years. The faith, psychological and emotional aspects of treatment were given due priorities in our world but the contemporary western schools stood against this concept. Further, technological advancements like microscopy, stethoscope, blood pressure cuff and refined surgery deeply unraveled the cellular world and separated far apart from the world of belief and emotion. Such developments marginalized the healing concept of soul. Walter Cannon revealed the direct relationship between stress and neuroendocrine responses in animals (Cannon, 1920). Further, Hans Selye explained the detrimental effects of stress and distress on health (Selye, 1956). During World War II, the importance of belief was again realized for healthcare and clinical management. Henry Beecher coined the term "placebo effect" in 1955 and subsequently found that belief alone positively favored treatment related therapeutic response in approximately 35% human patients (Beecher, 1955). Ample research works were performed on mind-body interactions since 1960. The enough evidences of benefits from biofeedback, cognitive behavioral interventions and hypnosis were collected; however, emerging evidences regarding their physiological effects were realized to get explored intensively. Complementary and Alternative Medicine approaches, like meditation and yoga, could not attract enough attention.

The complementary and alternative medicine, as mind-body medicine, is being most commonly used by majority of Americans (Barnes et al., 2004). Mind-body medicine focuses on the relationships between the brain, mind, body and behavior and their effects on health and disease. According to the National Center for Complementary and Alternative Medicine (NCCAM), it encompasses a large group of therapies such as hypnosis, meditation, yoga, biofeedback, tai chi, and visual imagery. Positive benefits of mind-body medicine have been observed in numerous conditions (Ernst et al., 2007)

including headaches (Wahbeh et al., 2008), coronary artery disease (Rutledge et al., 1999), chronic pain, mood, quality of life and coping improvement (Astin et al., 2003). These therapies have also been shown to ameliorate the disease and treatment related symptoms, such as chemotherapy-induced nausea, vomiting and pain in patients with cancer (Mundy et al., 2003). The prominent feature of mind-body medicine is that the mental state influences the physical health of human beings. We have reviewed the prevailing situation of the most effective mind-body medicine and most sensitive body results including the immune reflections for further trials. This review typically aims at the characterization of mind-body medicine for benefits of human health. Systematic evaluation of mind-body impacts on various systems including effect on immune system has also been performed.

Historical perspective of mind- body medicine

The Mind-body medicine refers mainly to the beneficial aspects of smooth and balanced coordination between the two vital faculties of human body – the brain and remaining parts of the body. It further concentrates on the psychological and behavioral aspects which serve as the efficient tool for the emotional, mental, social, spiritual and behavioral factors responsible for directly affecting the human health. The mind-body medicine, as complementary and alternative medicine, is used by the ever increasing number of people in America for their well-being (Barnes et al., 2004). Mind-body medicine focuses on the relationships between the brain, mind, body and behavior and their effects on health and disease. The healthy relationship between mind and body has already been recognized over thousands of years in prominent healing traditions including the ancient Greek system- the progenitor of modern western medicine, however, due to scientific and technological developments in medical sciences, the mind-body concept of medicine was highly neglected. Interest in conducting researches in the area of hypnosis was expressed during 19th century. Freud gave the concept of unconscious mind which pioneered the research in the area of mind influencing the human health around 19th century. In early 20th century, Walter Cannon started exploring the physiological effects of emotional stimuli. Further, similar types of research studies on hypnosis were performed and greatly expanded in 1950. Clark Hull worked on Knowledge and purpose as habit mechanisms (Hull, 1930). The term “*relaxation response*,” was coined by Herbert Benson in 1970 (Benson, 1970). Afterwards, quantifiable amount of research work was conducted on clinical effects of mind-body medicine. It was reported that emotions like anger, anxiety and depression can have effects on clinical outcomes including mortality for cardiovascular disease, cancer and even HIV infection. Further, researches have proved that mind immensely influences the nervous, endocrine and immune systems thereby collectively causing ample impacts on physiology of human beings. Besides, studies on mind-body medicine have shown its effect on brain function including the structure. Various strategies of mind-body therapy are relaxation, hypnosis, visual imagery, meditation, yoga, biofeedback, tai chi, cognitive behavior, group support, autogenic training, and spirituality.

Scope of mind-body medicine

Mind-body medicine is a new and emerging concept of therapy using mind-body coordination for medication purposes. It is committed to ensure disease free, better and quality life to human beings across the world. The mind-body concept of therapy represents a huge portion of Complementary and Alternative Medicine used for therapeutic purposes by the people. In 2002, five relaxation techniques and imagery, biofeedback and hypnosis were collectively used by more than thirty percent of adult U.S. population. Even prayer was used by more than fifty percent population as part of the treatment.

Mind-body medicine for the treatment of various human diseases

From the last 20 years, research investigations have shown that the psychological factors mount effects on the development and progression of coronary artery disease. Research studies have proved that mind-body interplay can be effective in clinically treating the coronary artery disease including reduction of all causes of mortality approximately two years. Clinical trials indicated that these interventions are particularly effective as adjunct therapy in arthritis management by reducing pain upto four years (Woo et al., 1994). Multiple sclerosis (MS) is a chronic neurological disorder with emotional, cognitive and physical reflections. Mind-body therapies are increasingly used by adults and children in America (Barnes et al., 2009). In a survey conducted on 1,110 multiple sclerosis patients, 32% reported using mind-body modalities with high level of benefit (Yadav et al., 2006). Though, these practices vary widely in techniques and applications, yet, enhancing the mind capacity for improving physical and psychological wellbeing is the point of commonality shared. The autonomic nervous system is cooled down by the effects of mind-body techniques and enables the conditions of mitigating psychological stresses (Taylor et al., 2010). Various research studies on mind-body interventions have shown alterations in several immune parameters, however, it is ambiguous whether these alterations are sufficient to impact the disease progression or prognosis (Cooper & Kohlmann, 2001; Lorig & Holman, 1993).

Clinical trials on mind-body medicine

Mind-body medicine is widely used in various human diseases for effective clinical management. In such situations, clinical trials on mind-body medicine, otherwise rarely worked, for the cure of several human ailments indeed are immensely required to offer these medicines global acceptance and significance in the form of well-studied drug. Further, this medicine has to be explored as to how it influences at gene level in human patients.

Table 1. Table showing various human diseases treated by the mind-body medicine

S.No.	Condition	Mind-Body Therapy	Level of Evidence ¹	Comment
1.	Anxiety disorders	Mindfulness meditation	A	-----
2.	Cancer: Nausea and vomiting (chemo therapy)	Guided imagery Hypnosis	A B	Guided imagery "A" when combined with other therapies
3.	Cancer: Pain	Hypnosis Guided imagery	A B	Guided imagery "B" when combined with other therapies
4.	Cancer: Psychological symptoms (eg, mood, anxiety, stress)	Guided imagery Mindfulness meditation	A A	-----
5.	Chronic constipation (pelvic floor dyssynergia)	Biofeedback	A	First-line therapy
6.	Chronic pain (various etiologies)	Guided imagery Mindfulness meditation Hypnosis	B A B	-----
7.	Depression	Mindfulness meditation	A	MBCT or MBSR
8.	Fibromyalgia	Mindfulness meditation Guided imagery	B C	-----
9.	Hypertension	Biofeedback	B	Thermal, HRV, and electrodermal biofeedback best, add relaxation or cognitive therapy to biofeedback
10.	Incontinence: Fecal	Biofeedback	A	First-line therapy
11.	Incontinence: Urinary	Biofeedback	A	Stress, urge, mixed, or post-prostatectomy
12.	Insomnia	Mindfulness meditation Biofeedback Hypnosis	B C C	Progressive muscle relaxation and combination of mind-body therapies also shown effective
13.	Irritable bowel syndrome	Hypnosis Guided imagery	A C	-----
14.	Migraine headache	Biofeedback Guided imagery	A C	EMG biofeedback or thermal biofeedback plus relaxation
15.	Tension headache	Biofeedback Guided imagery	B C	-----

¹Level of evidence: A, high quality: consistent evidence from randomized trials or overwhelming evidence from other sources; B, moderate quality: evidence from randomized trials with important limitations or very strong evidence of some other form; C, low quality: evidence from observational studies or randomized trials with serious methodologic flaws. EMG, electromyography; HRV, heart rate variability; MBCT, mindfulness-based cognitive therapy; MBSR, mindfulness-based stress reduction.

Mind-body medicine and the immune system

Ample research findings, related to human immune system, have proved that effective emotional traits (both positive and negative) pose impacts on the immune competence of people to resist the infections and to curb down the diseases. The recent laboratory investigations have shown direct relations between psychological or emotional traits and the incidence of respiratory infections (Moher et al., 2001).

Mind-body medicine and meditation

Meditation is the commonest form of mind-body interplay. It is a conscious mental process responsible for inducing a set of integrated physiological changes collectively known as relaxation response. Recent studies involving imaging (magnetic resonance imaging) are increasing the understanding of mind-body mechanisms. Meditation is known for enhancing antibody

titers to influenza vaccine thereby suggesting strong linkages among meditation, positive emotional states, localized brain responses and improved immune function (NIH Technology Assessment Conference Statement, 1995).

Stress and wound healing

The individual basis of response in wound healing has since long been known. Clinical follow up studies have shown that negative mood/ stress retards down the process of healing. Researchers have demonstrated that stress or a change in mood is sufficient to modulate Matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) expression and presumably wound healing (Malone et al., 1989). The activation of hypothalamic pituitary-adrenal (HPA) and sympathetic-adrenal medullary (SAM) systems may have modulatory effects on the levels of MMPs thereby providing a physiological relation among mood, stress, hormones and wound healing.

Conclusion and future prospects

Through this research review article, we have endeavored to conceptualize and popularize the medicinal relevance of mind-body medicine. This medicine appears as an abstraction in comparison with modern synthetic drugs, however, the associated therapeutic responses are quite evident. Further, dose, duration, magnitude and exposure of mind-body medicine, at individual level, highly require be scientifically researching and establishing. The main objective of this medicine is to mitigate the prevailing mind stress and body complications without taking any help of modern synthetic drugs. It also helps individuals to become its own therapeutic monitor and self-responsible for holistic wellness. This concept in treating various human diseases appears sufficiently promising and encouraging. In developed world including America, this medicine finds significantly far and wide acceptance in clinically managing the health of individuals as main part of the complementary and alternative medicine. Modern day researchers have found the brain and central nervous system positively influencing the immune functions. These interactions are studied in an ever growing field i.e. psychoneuroimmunology which was introduced by Robert Ader and Nicholas Cohen in 1975 (Ader & Nicholas, 1975). It is evident from literature survey that immense researches have been performed on mind-body medicine, however, the role of mind-body medicine on immune system have been poorly understood (Irwin & Vedhara, 2005; Segerstrom, 2012). Further, its various facets including dose standardization, clinical validation, individualistic approach and time and schedule of treatment have not been fully explored at molecular level.

It is worth stating that this medicine, as yet, has not been scientifically researched out to be graded as a ready drug for general uses of people globally. Further, its clinical standardization and trials are yet to be carried out for effective value addition to this medicine. Unraveling the underlying mechanisms of action of this medicine is still to be accomplished. A detailed study on molecular mode of action of this medicine, with a major focus at gene level, will help in upgrading and strengthening the clinical efficacy of mind-body medicine. The future prospects of this medicine are ever bright for ensuring disease free, better and quality life to human beings throughout the world. The minimum to almost no financial and infrastructural inputs required still excels its societal and humanitarian values. The involvement of no expert human resources, as doctor, makes it a medicine of world choice with ever increasing values and significance. The detailed scientific researchers are highly warranted to make the best use of mind-body medicine globally for achieving better targets of quality life to human beings.

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