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MIND-BODY PRACTICES AND PHYSIOLOGICAL HEALTH

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ABSTRACT

The use of mind-body practices has been progressively integrated into psychotherapeutic and behavioral medicine approaches, to enhance health and well-being. These practices are broad terms that includes mindfulness, meditation, hypnosis, yoga, prayer, and/ or tai chi used to train the mind and behavior so that positive physiological processes can be elicited. Mind-body methods are regarded as the autogenetic counterpart of psychosomatic medicine and focuses on health enhancement through the fostering of positive states such as optimism, acceptance, joy, and relaxation. Unlike traditional psychosomatic models that emphasize the role of negative mental states in illness, mind-body practices focus on stimulating the parasympathetic nervous system, decreasing reactivity to stress, and maximizing physiological stabilization and recovery. This review looks at the evidence for common mind-body techniques, and their psycho-physiological mechanisms, and their ability to reduce sympathetic arousal and enhance resilience. The letter also addressed how these practices can help foster self-regulation, self-care, empowerment and spiritual wellbeing. Seeing it through the lens of integrative medicine allows us to consider mind-body practices. They can be useful aids to conventional treatment. Even though they are getting used more and more and people are studying them, further empirical investigations into their autogenetic effects are required to optimize their application.

KEYWORDS: Mind-Body Practices, Autogenesis, Integrative Medicine, Stress Reduction, Psychophysiological Mechanisms.

1. INTRODUCTION

Mind-body practices have become increasingly popular as adjuncts to psychotherapeutic and behavioral medicine interventions, as well as components of integrative and lifestyle medicine (1–3). They are used not only in clinical settings but also in community and workplace programs to promote stress reduction, resilience, and self-regulation. In parallel, scientific interest in their psychophysiological effects has grown, with a rapidly expanding body of evidence from randomized trials, neuroimaging studies, and mechanistic research (4).

In this review, the term mind-body practices is used in a relatively broad but pragmatic sense to denote structured interventions that intentionally engage mental processes (attention, imagery, breath regulation, contemplative focus, or movement awareness) in order to influence physiological functions and health outcomes. This umbrella includes mindfulness-based programs, meditation, yoga, tai chi, qigong, hypnosis, relaxation training, and related approaches, while acknowledging ongoing debates about definitional boundaries in the literature (5–7).

Building on developments in psychoneuroimmunology and related disciplines, we summarize current knowledge on how mind-body practices may modulate stress physiology, immune and inflammatory pathways, cardiovascular regulation, pain processing, and metabolic control (8,9). The aim is not to advocate for these practices uncritically, but to synthesize conceptual foundations, mechanisms, clinical applications, and limitations, and to highlight priorities for future research and responsible implementation in modern health-care systems.

2. THE CONCEPT OF MIND-BODY PRACTICES

Mind-body practices comprise a heterogeneous group of methods that combine cognitive, emotional, somatic, and sometimes spiritual components in a structured way. Despite their diversity, most of these practices share several common elements: cultivation of focused or open-monitoring attention, regulation of breathing or posture, induction of relaxation or non-reactive awareness, and training in self-regulation of stress responses. Through these mechanisms, mind-body practices are hypothesized to influence bidirectional communication between the central nervous system, the endocrine and autonomic nervous systems, and immune and inflammatory processes, which in turn may contribute to symptom relief and the alleviation of psychosomatic and psychosocial problems (10).

2.1. Definition And Overview

Mind-Body Practices (MBP) include techniques, training and skills that are mainly directed at the mind (8). They are used to gain access to altered mental or behavioral states, with subsequent positive influence on physiological, health-related or pro-social changes (11). Mind-Body approaches are increasingly recognized as important topics in behavioral medicine and public health (11). Definitions are important to delineate this growing field empirically (12). The attributes and examples of MBP are listed and the majority of existing definitions are reviewed (12). The second part aims to provide an overview of sub-styles and traditions of MBP and their different approaches and key techniques (13). Mind-Body (MB) practices are often cited as promising public health measures, mainly for their salutogenetic potential to enhance health and well-being (13). However, MBP are diverse, with respect to styles, traditions, techniques, key components and chosen ways of influencing physiological processes (14). They may also differ in their effectiveness, by providing a rationale to differentiate between MBP traditions, such as Classic Chinese Medicine, Ayurvedic medicine, Indian and Tibetan meditation traditions and frontline Western measures (14). Furthermore, almost all MBP reach into behavioral medicine, with psychotherapeutic interventions or biofeedback techniques, in comparison to more traditional methods applied to members of the public (15). Health is defined in a broad salutogenetic sense and includes optimal health or well-being, performance and good mood (15). In contrast, diseases are understood as a lack of health or well-being. In a narrow sense, MBP are considered necessary training and skills for the mind concerning behaviors, knowledge, surveillance or meditation training needed to achieve a specific, behaviorally related health goal since this definition may also encompass more traditional forms of MBP, such as herbal medicine, hypnosis, placebos and prayer (16). In the absence of complementary effects, the approaches and techniques commonly considered as MBP may be divided into two general areas (16). First, MBP proper aim at gaining access to a different mental or behavioral state advantageous for thermoregulation, heart rate variability, blood sugar regulation, monitoring muscle tension or secretion of growth hormone (17). On top of it, they may activate growth factors, gain attention to

hyperactivity of the immune system, self-regulation or provide trust in clinical users when properly done (17).

2.2. Historical Context

Mind-body practices have become increasingly popular among the public as well as among researchers (11). They comprise an array of different methods and techniques that use some sort of mental-behavioral training and are employed in addition to medical, physical or behavioral interventions (12). Mind-body practices involve the modulation of states of consciousness in order to influence bodily processes towards greater health, well-being and better functioning (13). They may thus be interpreted as the salutogenetic mirror image of psychosomatic medicine, where psychophysiological and health relevant consequences of a specific psychological state, such as stress arousal, psychological trauma or depression, are studied (15). The focus here is on the salutogenetic potential of some prominent mind-body practices and a selective evaluation of the evidence concerning them (16).

Mind-body medicine draws from different historical backgrounds (18). On the one hand, the Empirico-Materialistic understanding of medicine draws from the mechanistic world view and emphasizes physiological explanations (18). On the other hand, the Vitalistic understanding of medicine draws from the holistic world view and emphasizes a non-mechanistic understanding of bodily functioning, which is organized by an immanent vitalistic life principle (19). Between these two extreme frames of reference a copy of medical understanding has developed which is somewhere in the middle (19). This new understanding does not know only one explanation as understood by the skills but uses the model that seems appropriate for a situation (20). For instance, one explanation for the blood coagulation after an injury may be the observation from the mechanistic frame concerning the change of consistency of blood (20). Other explanations may refer to the organization of healing processes by a vitalistic life principle (21). It is important to appreciate this diversity in explanations to fully understand living systems and to account for the efficacy of classical as well as empirico-materialistic medicine (21).

The medicine of the mechanistic frame must be regarded as an industrialized version of the alternative medicines of the vitalistic frame (22). It became industrial in that countries have built large laboratories taking special care about research and production to guarantee efficacy and safety as far as known (22). Healers were scrutinised and educated to avoid malpractice, such as in the Antroposophic, Ayurvedic, Chinese or Homeopathic traditions (23). Not everything that was handed down through different cultures and passed the careful scrutiny of generations, has proved to be true (23). Physicists and other empirico-materialists may accuse phenomenologists or vitalists of wilfully ignoring how far much of the living world can be understood mechanistically on well-established principles (24).

Complementary Alternative Medicine as well as the art of medicine in general, no matter in which tradition or country, must not seek to elicit reflections that fit previous paradigms or frame of references. Instead, purposes of better living and health must be the exclusive operating frame of reference (25).

3. TYPES OF MIND-BODY PRACTICES

Mind-body practices comprise a large number of very heterogenous applications of techniques and methods that all rely on some kind of mental-behavioral training including, for example, relaxation techniques, hypnosis, different forms of meditation, biofeedback, visualization techniques, mindfulness training, qi gong, tai chi chuan, self-hypnosis and self-suggestion, different forms of yoga, creative writing and art therapy, different forms of psychotherapeutic approaches, etc (1). In many cases, various forms of meditation, dancing, laughing and even prayer, should also be included. Research has been indicating that mind-body practices modify cognitive, emotional and social factors that affect physiological and biological processes relevant to disease susceptibility (26). These include alteration of states of consciousness such as dissociation, relaxation, trance, focused attention and/or enhanced awareness, altered perception of body states, changes in feelings and emotions and self-perception and identity, cognitive restructuring, and increased adoption of a holistic worldview (26). At the same time this brings us to issues in the definition of mind-body interventions (27). One may define mind-body interventions as those that aim at improving health, well-being and performance by means of modifying or controlling mental/psychological functions by using behavioral and physiological approaches (27).

3.1. Yoga

Yoga is an ancient contemplative discipline originating in India that has gained immense popularity in the Western world and continues to

grow (28). Traditionally linked to the promotion of spiritual development, it has been reformulated in the West as a mind-body exercise promising various health benefits (28). Patanjali's Yoga Sutras describe these practices as a systematic approach to achieve physical, mental, and spiritual well-being (29). The eighth limbs of yoga classify a broad range of practices: ethical disciplines and social guidelines; personal observances and the proper use of physical and mental faculties; postures and exercises; challenges and the ability to remain still; breathing; containment of the senses and thought processes; concentration and contemplation; and meditative absorption (30). The eight classic limbs of yoga embrace a large repertoire of mind-body practices, including mindfulness meditation and contemplative prayer, as well as physical exercises, breathing techniques, and postures (29). As a result of this diversity, a wide range of yoga interventions exist, varying in structure, duration, and attentional focus on either physical or cognitive aspects (28). Since the popularization of Westernized yoga, many experimental interventions based on the ancient tradition have invoked various philosophical and scientific concepts to explain their efficacy (30). However, despite widespread interest, the physiological mechanisms by which yoga practices may influence physical and mental health remain largely unexplored (31). Notably, little peer-reviewed research is devoted to exploring biological changes resulting from yoga practice, despite increased public interest in the health benefits of yoga postures (32). The lack of research on the mechanistic explanations of yoga's effects is surprising given the availability of experimental methods to assess somatic and neurophysiological changes in patients with common disorders addressing well-defined mechanisms of action (31). Restorative yoga interventions are gaining popularity as treatment options for anxiety, insomnia, and other stress-related diseases (32). Restorative yoga, derived from hatha yoga, is characterized by poses and breathing exercises performed in a time-extended manner such that postures are held for several minutes, often with the aid of props (33). Practitioners maintain a calm, quiet, and alert attitude, facilitating attentive focus on bodily sensations (33). By providing a deep, physically supportive yin, restorative yoga instills a calming effect on the nervous system that helps restore and maintain healthy levels of physiological arousal (34).

3.2. Meditation

Meditation refers to a wide variety of practices that deliberately engage attention to focus and quiet an agitated mind (35). Many current scientific researchers culture their knowledge of the practice from secular contexts, typically realizing that they are curious about how something as commonplace and anthropologically universal as meditation can have such remarkable physiological and cognitive effects (36). These effects include observed behavioral changes revealed by the ways meditation can positively alter objective indices such as lowered blood pressure and levels of cortisol (36). Structural neuroimaging studies indicate that meditation has the potential to induce cortical thickening, for example, in the left prefrontal cortex, with its subsequent activation of areas involved in attention and emotion regulation in fMRI studies (35).

When this secular connotation of meditation was introduced via the relaxation response into Western societies, and subsequently embraced by the mass populace, a quarter century passed before empirical investigations of its physiological and cognitive effects would emerge (37). Further longitudinal investigations of physiological markers such as blood pressure and metabolic contrasts with long-term meditators not only offer preliminary evidence of the benefit of the practice for heart disease and metabolic syndrome but also indirectly infer efficacious clusters of practices and attentional orienting mechanisms (38).

Meditation is a widely practiced behavior and a growing field of scientific inquiry (39). It encompasses a wide range of techniques; however, they can all be broadly described as mental training programs designed to bring about specific changes in the mind (40). These changes range from introductory techniques for calming and quieting an agitated mind, through the establishment of a basic level of focused attention, to levels involving profound insight into the workings and implications of the mind (41). Although myriad styles of meditation exist, they may share a common theme of controlling attention, or, to put it differently, a common purpose of self-regulation of mind (40). Among the potentially innumerable cognitive systems, the influence of meditation seems to focus on the attentional variety (41).

3.3. Tai Chi

Tai Chi (taiji), a traditional Chinese mind-body practice characterized by a sequence of progressive, gentle, flowing movements, has been widely practiced as a source of physical activity for health-

promoting benefits and rehabilitation (42). Tai Chi has gained worldwide popularity because of its cultural tradition of ancient East Asia, aesthetic motion, and unique health-promoting effects on physical and psychological health (42). A large body of studies has shown that Tai Chi practice is associated with psychological well-being, including perceived stress, anxiety, depression, mood, self-esteem satisfaction with life, coping style, and quality of life (43). However, meta-analysis has not been conducted to evaluate the cumulative effect of these studies on psychological outcomes (43). The purpose of this systematic review is to summarize the current state of experimental trials of Tai Chi on psychosocial health benefits (44).

3.4. Qigong

Qigong is a gentle mind-body practice consisting of slow mindful movements, breathing, and awareness (45). Most movements are smooth and coordinated and a harmony between movement, breathing, and awareness is sought (45). Thematic qualities are a conscious effort of relaxation while performing the movements and a focus on the movements themselves (46). Because of the smoothness and awareness of movements, Qigong has a culture of calmness (46). Consequently, Qigong contributes to relaxation, coordination, balance, strength, flexibility, and health (47). An old Chinese saying goes, through Qigong practice, one will become strong as a woodcutter, flexible as a child, and calm as a sage (47).

3.5. Pilates

More than a hundred years after its introduction, the Pilates method is widely acknowledged today (48). A significant amount of research has been undertaken to explore its impact on noncommunicable diseases (49). Up to 2030, as a result of demographic changes and the rise in lifestyles adopting risk factors, it is expected that NCDs will cause an economic loss of $47 trillion worldwide (49). Providing people with opportunities to discover and live new physical habits through nonconventional therapies such as Pilates is a way to prevent NCD acquisition and enhance physical and rehabilitation care (48).

First proposed in the early 20th century, the Pilates method is explained and detailed and still practiced today—more than a century later (50). Devoting years to advance mind-body techniques and helping people with a multitude of health complaints, P. Pilate offered them as therapeutic means outside of conventional medicine (51). Understanding that the mind and body as a whole contribute equally to a person's health, he created an exercise method specific to body dysfunction, the genesis of wellness, disease, and rehabilitation (52). Today, Pilates is well-known by name, type, and product (51). Pilates also has multiple definitions which include its anatomy—where it is practiced, the location of Pilates schools, certifying agencies, and physical medicine (52).

4. PHYSIOLOGICAL MECHANISMS

In addition to mind-body practices that involve focused movement, mindful attention, and/or meditation, which typically lead to slower breath and heart rates, other mind-body practices specifically focus on voluntary modulation of breathing (53). Whereas sustained engagement of breathing techniques that purposely focus on the inhalation, exhalation, or retention of breath or a combination of these four basic breathing techniques can have a very positive effect, these practices are not intended to influence other bodily processes or physiological parameters (54). Most mind-body practices involve a direct focus on some body part or movement (54). Breathing practices, on the other hand, do not fixate the attention on any particular part of the body (55). Rather, they induce a full body experience and awareness enhanced by focusing on breathing flow, sensations, sounds, and rate (55). Some breathing practices can rapidly induce a very relaxed state which can be characterized by heterogenous respiratory patterns with a predominant slow rate of 4–9 breaths/min, low respiratory variability and increased synchrony (i.e. low amplitude), along with decreased vagally mediated heart rate variability (HRV) (56).

4.1. Stress Reduction

Mind-body practices appear to reduce the physiological reactivity to psychosocial stressors, thus possibly playing a key role in the beneficial effects on physical health (57). Previous research has supported some mind-body practices such as yoga as effective for reducing the physiological response to social stress (58). However, the benefits of different types of mental practice with other styles (still in the broader rubric of meditation) are not yet well understood (59). This is significant because each type of mental practice is based on different theoretical assumptions and empirical evidence (5). Also, comparably different mind-body practices may influence the strength of the impact on health (27). In past research, much attention has mainly been devoted to the role of mindfulness-based

mental training (59). While there is now a closer attention towards other forms of mental practices, working with various mental states, still little is known about their specific contributions to stress reactivity (60). In a simultaneously administered lab study, the efficacy of two different guided mental imagery interventions, which were already proven to lower psychological stress response levels, were compared with a matched standard mindfulness practice and a control group (61). The comparison between present-moment attention focus and an enhanced performance of different behavioral and self-disclosure abilities, exploratory uses of the positive imagery technique, and explicit emphasis on the role of positive social and affective perspectives could show the potency of the latter (61). Regarding future research, further aspects may be examined, such as the exact mechanism of the possible group differences (5). In previous literature, longer interventions were mainly focused on training variation; instead, the effectiveness of just one single session of a mental practice type was addressed here (14). Therefore, the present demonstration of group differences may not generalize to longer interventions (62). Further research with a more sophisticated design might clarify whether a single practice with one type of mental practice is beneficial, but longer training with a varying repertoire would be even more effective (62).

4.2. Immune System Modulation

Mind-body practices including yoga, tai chi and qigong, enhance mobility and physical capability, improve balance, strength, endurance, flexibility and cardiorespiratory functions, and reduces risk of fall (63). Psychological health benefits include greater sensory awareness, relaxation response induction, reductions in anxiety and depression (64). Mind-body practices also affect physiological health – some dose-dependent and treatments specific effects on blood hormone/neurotransmitter levels, brain blood flow, brain activity and core temperature in laboratory studies (65). Mind-body practices affect immune system function and status through health behaviors and modulating psychological health (65). It has been shown mind-body practices' effects on psychosocial factors relevant to immune system functioning such as stress, distress, mood, and coping (64). Mind-body practices seem to modify the circulating levels of various proteins that regulate immune cell functions, including various pro and anti-inflammatory cytokines as well as chemokine (63). Psychological and immunological processes are influenced by circulating levels of neuroendocrine hormones which in turn influence the level of inflammatory cytokines (66). Mind-body practices induce the relaxation response, elicit immediate behavioral changes and long-term changes in health behaviors that were shown to modulate physiological processes and impact health (66). Influence on psychological factors relevant to immune system functioning including lower baseline psychosocial risk factors, better coping skills and less reactive immune responses and greater increases in protective health behaviors (65). Dietary changes and exercise motivation increase with practice. These factors modify proinflammatory cytokine production and circulating levels (67). Effects on neuroendocrine hormones: lower baseline levels of norepinephrine, blood volume, heart rate and stress, greater modulating effects on the levels of norepinephrine on the reactive cytokine responses (CRP, IL-6, IL-12), better coping skills and patterns which increase with practice (67). Effects on the immune system include decreased levels of various pro and anti-inflammatory cytokines (IL-1ra, IL-6, IL-10, TNF-α) and chemokine (IL-8), proinflammatory cytokine production in lay chronic stress conditions, and decreased absolute number of iTregs in prostate cancer patients paired with increased levels of IL-10 (68). Mind-body practices have immune modulating effects including altered circulating levels of various and modulation on circulating levels of chemokine (CCL-2, CCL-5, IL-8, IL-12), major immune cell counts, lymphocyte proliferation and NK cell activity (68). Higher quality studies with improved physiological and health behavior data collection methods are warranted (69). Letting go of stress is a major goal of many mind-body practices which seems to aid immune restoration through the physical physiological workings of the practices but at this point in time, little is known about how that aspect of mind-body practice outcomes could be measured (69).

4.3. Hormonal Balance

The human endocrine system releases hormones that affect multiple bodily functions. It consists of the pineal, pituitary, thyroid, adrenal, and pancreas glands (70). Hormonal imbalance results if the glands produce too much or too little hormones, leading to conditions such as metabolic syndrome and polycystic ovary syndrome (71). Stress and sleep deprivation can negatively affect hormonal balance by elevating cortisol and changing hormone

levels (72). Studies on the association of MBPs with blood chemistry and menopausal symptoms suggest that MBPs such as mindfulness-based stress reduction (MBSR) may reduce menopause symptoms, such as depression and somatic complaints by affecting hypothalamic-pituitary-adrenal (HPA) axis function (36). Additionally, MBSRs affect blood chemistry and symmetry by decreasing TSH and triglyceride levels (72). Only a few reports, however, have examined the relationship among MBPs, blood chemistry, and menopause symptoms (73). Thus, this study aimed to evaluate the association of MBPs with these parameters in healthy women within 5 years of menopause (73).

4.4. Cardiovascular Health

Traditionally, interest in the decreasing rates of cardiovascular disease (CVD) has centered on physical risk factors (74). Recently, however, the focus has turned to how psychosocial factors—stress, depression, anxiety, social support, and lifestyle behaviours—affect the prevalence and course of the disease (75). For the most part, physical risk factors are static markers (75). Physiological risk factors, in contrast, are dynamic; they can change in response to the actions of the individual or the environment (76). Psychosocial mechanisms are of a similar nature (76). The conditions of life, one's attitudes, and behaviours can change with potential consequences, both positive and negative, for health (77). The potential for change should lead us to seek psychosocial mechanisms that may prevent or recover from the physiological changes associated with CVD (74).

Stress is not inherently "bad." In the absence of stress, there is no motivation or energy to accomplish anything (78). Stress only becomes a problem when it exceeds a person's ability to cope with it (78). Any situation or event that is perceived as a threat—real or imagined—is considered stressful (78). Stress can lead to a dynamic equilibrium disturbance in one's physiological state and ultimately result in the failure to regulate physiological arousal (79). Stress in its many forms impacts on one or more of the physiological processes in CVD to produce a physiologic basis for the disease and symptomatic consequences of worsening health and functioning (80).

5. MIND-BODY PRACTICES AND CHRONIC ILLNESS

Current approaches to treat physiological conditions are very often limited to medications, surgeries, and other physical interventions that target the body (81). Progressive chronic illness directly affects the patient and cause enormous suffering (81). Oftentimes, they are progressive, incurable, and terminal. Some examples are chronic pain syndromes, chronic fatigue syndromes, chronic inflammatory conditions, neurodegenerative conditions, etc (82). Diseases from these categories affect mainly the body and result in a cascade of bodily disturbances (83). Additionally, these diseases exacerbate and are exacerbated by emotional, mental, and spiritual factors. Nonetheless, emotional and spiritual procedures have remained largely unexplored (84). Therefore, the main objective is to evaluate the most commonly used techniques, the mechanisms by which they operate, the physiological processes they modulate, and their underlying research studies in relation to chronic illness (84).

Mind-Body practices target cognitive, emotional, social, and spiritual areas that have been reportedly left unaddressed or insufficiently treated in current treatment (85). Some techniques address fundamental issues such as self-rejection, suppressed mourning and unintended distancing from family and society (85). Others open a new cognitive space through mindfulness to provide observations about what is happening and room for self-compassion (86). Yet, others utilize guided imagery to cultivate and restore a sense of connection, completeness, and oneness (86). These practices fit into a holistic paradigm allowing the patient to transcend a focus on the body and symptoms (87). Mind-body practices including mindfulness meditation, self-compassion, and guided imagery exercises are gathered here (87). Additionally, reasons for not practicing techniques, how to overcome obstacles, and embodied strategies to digest and integrate techniques are provided (87).

5.1. Impact On Chronic Pain

Chronic pain is a frequently encountered problem at a population level affecting 40% of adults in Europe and a common presenting complaint in a health care setting (88). For the patients this may severely affect their quality of life and lead to lost productivity and disability (88). The biopsychosocial model of chronic pain accounts for the multifactorial nature of chronic pain, integrating physiological, psychological, and social factors (89). Understandably patients, with the most complex pain conditions, experience the greatest disability (89). Previous studies on mind-body interventions and self-care in chronic pain have reported

encouraging findings, but few interventions have adopted a multi-dimensional focus encouraging chronic pain patients to address multiple factors associated with their health (90).

Mindfulness-Based Pain Management applies a novel approach to health care and chronic pain management backed by research (91). In a 10-week intervention, participants are taught mindfulness meditation and mindful movement practices along with psychoeducation tailored for chronic pain (91). Mind-based recommendations also highlight the importance of self-care and suggest a multi-faceted approach to promote residential health education (92). This cohort study compares the differences in pain, mood, and coping style at pre-intervention, as well as between the Mindfulness-Based Pain Management participant and wait-list control group (92). On test day 1 (pre-intervention), each participant completed a demographic questionnaire, the 4-item short-form McGill Pain Questionnaire, the Penn State Worry Questionnaire, the Mindfulness Attention Awareness Scale, and the adjusted Form C Coping Inventory for Stressful Situations (93).

5.2. Effects On Diabetes Management

Mind-body practices, in the form of meditative movements, can positively affect improvement and management of chronic diseases (94). Evidence suggests more studies have been conducted on the effectiveness of these practices in health and healing, and the following summarizes findings on the reason and evidence for their efficacy and effectiveness for two specific chronic diseases: type 2 diabetes and chronic pain (95).

5.3 Role in Cardiovascular Disease

During the last years, cardiovascular diseases (CVD) have been a leading cause of mortality and morbidity worldwide (96). While surgery and drug therapy represent the classic approaches of standard care, increased attention has been recently addressed to the effectiveness of complementary interventions in improving the quality of life of CVD patients, which in turn seems to exert an additional positive influence on cardiovascular health (97). Mindfulness-Based Interventions (MBI) represent one of the most promising of these complementary approaches, showing a growing number of applications to a wide variety of clinical conditions (97).

5.4. Mental Health Benefits

Mind-body practices, with an emphasis on mindfulness and meditative practices, are helping millions of individuals across the globe cope with a wide range of mental health issues and conditions (8). Mind-body practices encourage gentle thoughts and attitudes, benevolent organizing of cognitive and emotional processes, and the improvement of attention control, concentration, emotional self-regulation and thereby thought control (2). In such a relaxed and mindful state of consciousness, mind-body practices may help individuals cope with substantial social, emotive and somatic stressors; mental complexities of change, loss or trauma; and individual vulnerability to emotional carbonization and somatic disorganization (62).

The mental health impact of mind-body practices necessarily precludes the somatic and health-related impacts (98). The notion of well-being is re-valued and re-invented through mind-body practices, stressing not only the importance of the quality of mind in health and well-being but remarkably also the social construction of happiness and health (99). New appreciations of health, beauty, nobleness and happiness emerge over a long-lasting process of automated conscious and unconscious sensory associations, cognitions and emotions (100). The self and the self in relation to the other, to the world, also undergo a fundamental change, leading to adverse life-style changes, new patterns of relations, new daily activities, shifts in social role and additionally a significantly reduced level of never-ending worries, depression, guilty thoughts and catastrophizing imagery (100).

The alleviation of troublesome cognitive, affective and somatic processes, as primary functions and benefits of mind-body practices, is praised as life-transformative in depth, quality and amount of happiness (101). The beneficial psychological and health impacts of mind-body practices are summarized in terms of content- and process characteristics, target groups and individual-affective, temporal, multi-somatic and social transformation outcomes (102). Many practitioners consider mind-body experiences the key to a better, happier and healthier life – a truly life-transforming magnum opus (101). 319 87320

6. RESEARCH AND EVIDENCE

Mind-Body Practices (MBPs), such as Yoga and mindfulness, focus on awareness of inner and outer experience, consciously modulating breath and movement to cultivate mental and physiological states conducive to health and well-being (103). Evidence suggests that MBPs are efficacious in targeting health-related outcomes such as

depression and autoimmune diseases (65). MBPs afford broad salutogenic potential and can be used to support and augment conventional biomedicine in their preventive, rehabilitative, and palliative roles across a variety of health issues (104). Research into the efficacy and underlying mechanisms of MBPs for physiological health continues to expand and evolve, with several targeted reviews published in recent years (105). According to the American Psychological Association, Mind-Body Practices are "therapeutic approaches that harness the mind's capacity to influence bodily processes" (105).

Breath Practices (BP) are a sub-class of MBPs emphasizing awareness and voluntary regulation of breathing with and without movement. BP cultivate physiological states that, if desired, can be meaningfully modulated by conscious effort, while resulting health benefits are mediated by bio-psycho-socio-spiritual pathophysiological mechanisms (106). BP practice involves a simple and brief set of somatic techniques focusing on subjective experience of breath in the body (107). Metapho-dramatic and role-play techniques may enhance salutogenesis and cultivate this optimal breathing experience with other emotion-orienting practices (107). BP application is specified and augmented to address physiologic health challenges in covert and overt, survivor and caregiver posttraumatic environments (108). Such BPs can slow and deepen breath, facilitate sympathetic-to-vagal breathing resynchronization by promoting co-regulation with a trusted other, elicit compassionate empathy regulation, balance and complete emotionally charged, physiologically braided trauma events, or enhance integration of psychosomatic trauma narratives into life stories (85).

7. PRACTICAL APPLICATIONS

Mind-Body Practices in Integrative Medicine Mind-body practices comprise an array of different methods and techniques that use some sort of mental-behavioral training (e.g., concentration, relaxation, meditation, etc.) and include the modulation of states of consciousness (e.g., focused attention, positive attitudes, etc.) in order to influence bodily processes (17). This modeling of bodily processes may affect different levels (e.g., neuro–endocrine, autonomic nervous system, immune system, etc.) and contribute to health and the minimum of disease, but also help to cope with visible organic disease or other maladies that subjectively reduce health and well-being (22). By statistically aggregating such mind-body practices in integrative medicine a techno-complex has emerged, with distinct heterogeneous characteristics, which may theoretically and empirically confound the health and cure effects of specific techniques of the practice (87). Given the enormous and increasing popularity of mind-body practices and the limited empirical evidence, it is important to identify the best-evidence practices (109). Comprehensive systematic reviews are available evaluating the efficacy and effectiveness of mind-body practices in diabetes, cardiovascular disease, chronic pain, infectious diseases, migraine, and other headaches, substance abuse addiction, stressful events, behavioral modification, etc (109). Most mind-body practices are safe and efficacious treatments for a variety of chronic diseases of the body as well as the mind (110).

7.1. Integrating Practices into Daily Life

Integrating and incorporating MBPs into daily life can be done both formally and informally (111). Presently, a stunning number of approaches to MBPs exist alongside variations of these approaches (111). These facts suggest that individuals, therapists, educators, and businesses need to take responsibility to maximize MBP effects on their own lives, the lives of clients, students, and employees, respectively (112). Since there is no one best approach to using MBPs to enhance overall well-being, practitioners are advised to investigate how to best fit the practices to their lives and needs in ways that are achievable, sustainable, and affordable within the confines of their time, knowledge, resources, and social realities (113).

It is also recognized that some MBPs may suit some people better than others. Each approach has its unique culture, historical roots, theoretical basis, techniques, training required, delivery methods, modes of education, and research (114). In selecting and using MBPs, the time, effort, and monetary costs of ways chosen, as well as effectiveness, should be taken into consideration (115). A strategy to bolster the inclination and ability to implement MBPs on an ongoing basis and with maximal effect is also needed (116).

7.2. Mind-Body Practices in Clinical Settings

In the past 30 years, Mind-Body Interventions have become an important aspect of a large number of clinical settings for the treatment of a variety of diseases (24). High selection pressures in the health domain have led to rigorous testing of Mind-Body interventions regarding their effectiveness in the treatment of specific diseases (5). Certain Mind-

Body interventions have undergone extensive testing and have been included in treatment guidelines for established diseases such as breast and prostate cancer, but also for new phenomena classified as somatoform disorders or psychosomatic diseases (35). In addition to evidence, assessing treatment effectiveness has been made easier for certain specific Mind-Body interventions due to the availability of treatment manuals and accompanying training programs for trainers/therapists (117). Programmed treatment manuals not only provide the necessary component of rigorously controlling treatment conditions in trials, they also make it easier after positive findings to implement specific patient treatments for specific diseases on a large, nationwide or even worldwide scale (117). This appears to have resulted in an exponential growth rate worldwide for the number of trained therapists of specific Mind-Body interventions and the market potential for certain Mind-Body interventions, which has risen (118). Within this context of rapid growth, diagnostic health claims for Mind-Body interventions have also been made. These claims are made either that certain Mind-Body techniques can treat specific ailments or conditions, or that they can enhance overall well-being or health (118). With this myriads of effects claimed for a very complex system of Mind-Body techniques, rigorous assessment of potential effects clearly is warranted (118). Classification of Mind-Body interventions based on the predominant type of mental involvement is necessary to achieve a coherent picture of potential Mind-Body intervention therapeutic effects (119). Basic effects common to all Mind-Body interventions, such as changes in neurophysiological arousal, sociocognitive skills and capabilities, body awareness and ownership, emotional awareness and control, spending time in a different state of consciousness, a feeling of connectedness to self, others and the universe, and purposiveness will also be discussed (119). Psychologically focused recommendations or public and political advice for the treatment of general health in postmodern societies, such as "prevent obesity, exercise regularly, meditate mindfully, positive thinking, get enough sleep, and grow social networks" will be elaborated on (120).

8. CHALLENGES AND LIMITATIONS

The health benefit claims of Mind-Body good health courses and interventions make the scientific evaluation of these claims of paramount importance (120). Traditional research methods have their inherent challenges and limitations (121). Many put the burden of proof on health through mind-body courses on unwarranted expectations impossible to fulfill (120). Meta-analysis shows large, yet heterogeneous effect sizes (121). Many studies use rather a few small pilot trials yielding large effects that cannot replicate the initial findings (122). Most studies use inadequate and uncalibrated measures and rely on overly reductive concepts (122). Usually, reliable blinding of participants is impossible which leads to exaggerated effect sizes (123). Fatal methodological shortcomings threaten the validity of the conclusions of all field studies of Mind-Body good health courses (123). A reform in research procedure of the fundamental health effect of Mind-Body practices is proposed (124).

8.1. Barriers To Adoption

In spite of the popularity and apparent health benefits of MBPs (Mind-Body Practices) for many individuals and groups, as well as the growing interest in their salutogenetic potential, there are also systematic barriers to their broader adoption and continued practice, which are explicated below (125). Barriers to the broader adoption of mind-body practices fall into three categories: (a) incompatibility with current lifestyles and worldview, (b) issues of motivation and access, and (c) lack of publicity about mind-body practices (126).

Various aspects of the modern western lifestyle are incompatible with any regular, sustained practice of MBPs (126). Work and commuting time may leave no time for an early or late practice (126). Busy family schedules may keep an individual too occupied to reap the calming and centering effects of MBPs (127). Cities with little green space may have few places suitable for this outdoor practice (127). A busy mind, preoccupied with worries about work or family, may block an individual's ability to concentrate on awareness during MBPs (128). More serious modern, primarily self-imposed barriers to MBPs include the aversion of some individuals to certain philosophies and the strong sentiments of some (128). For persons for whom mind-body practices are a cultural taboo, any attempt to adopt such methods is likely to be resisted (129). Parents fearful for the spiritual welfare of their children, or of being perceived as 'crazy' for doing certain exercises, are unlikely to support their participation in MBPs involving meditation, chanting, or some movement arts, especially if subscribing to groups that blur the boundary between religion and enterprise (129).

The barriers to broader practice of MBPs listed

above suggest that more publicity about and advocacy for MBPs is needed (130). Publicity might be achieved through institutions, such as schools and centers, in cities, which hold formal classes to teach at least the rudiments of MBPs, or large-scale events that help overcome fears about participating in mass movements, expressions, or sounds (131). With the right publicity, mass meditation or tai chi practice could easily take place in public parks (130). Group shots could then easily be taken for the media (131). Festivals could be arranged with a 'mind-body pursuits' day in-between, when practices could be sampled by the public (132). Such publicity would ideally include discussions about safety issues in mind-body practices in order to avoid the reigniting of concerns about cults (132).

9. CONCLUSION

This article discusses Mind-body practices (MBP), which encompass a wide variety of intervention strategies that pairs focused attention, intention, and body awareness with engagement in bodily movement (86). MBP include Eastern forms of meditation, movement therapies and trainings (133). MBP were derived from psychotherapeutic approaches that stem from East-Asian philosophies (133). These ancient psychotherapeutic practices have been assimilated in western medicine and have shown salutogenetic effects, i.e. they are health promoting (134). MBP influence physiological processes directly or indirectly by modulating states of consciousness, which in turn have an effect on states of health and well-being (134). These salutogenetic mechanisms and processes resulting from direct engagement in mindfulness-based corporeal practices are elucidated affording a more detailed account on how MBP work (135). MBP are also widely used in integrative medicine approaches addressing both psychological and physiological processes and have been empirically researched with respect to its health promoting efficacy (136). The salutogenetic potential of MBP was examined in a systematic literature review and meta-analysis of studies on MBP in affects, antidepressant effect, eating habits, quality of life, and stress (136). A taxonomy of MBP is proposed and the mechanisms of MBP effectiveness and effectiveness of widely used contemporary MBP including periods of stillness and silence, ceremonial breath practices, Koan meditation, present moment focusing breathing are reviewed (135). In conclusion, there is promising initial or pre-effectiveness evidence for the salutogenetic potential of MBP amongst general population, women during pregnancy, cancer patients, cardiac patients, and persons living with other chronic illnesses (137). MBP implementation into healthcare service systems, particularly as self-accountable health promoting routines is encouraged (97). Further research with bigger sample sizes, including the economically disadvantaged and minority populations and addressing ways of integrating MBP into healthcare systems is invited (138). Future work should focus on ethnographic studies of MBP approaches as well as a further refinement of the MBSR protocols, MBP scales, facets of weekly MBP practice, and adaptive and systemic MBP practicability measures (138).

REFERENCES

Abbas J. Utilizing Faith-Based Mind Body Intervention to Improve Stress Level In Women 18 Years and Older. 2024. proquest.com

Aeschbach VM, Fendel JC, Göritz AS, Schulze-Marmeling C, Schmidt S. The effects of a tailored mindfulness-based program on the positive mental health of resident physicians—a randomized controlled trial. Mindfulness. 2022 May;13(5):1292-306. springer.com

Aeschbach VM, Fendel JC, Schmidt S, Göritz AS. A tailored mindfulness-based program for resident physicians: A qualitative study. Complementary therapies in clinical practice. 2021 May 1; 43:101333. wisc.edu

Akaka J, García-Gallego A, Georgantzis N, Rahn C, Tisserand JC. Development and Adoption of Model-Based Practices in Precision Agriculture. InPrecision Agriculture: Modelling 2023 Jan 4 (pp. 75-102). Cham: Springer International Publishing. [HTML]

Akram M, Hasan MK, Sołowski G. Transformative Mind-Body Technique for Enhanced Wellness, Clarity, and Emotional Balance. EuroScience Journal of Technological Innovation (ESJTI). 2025 Feb 10:18-23. easrjournals.com

Alvarez-Perez Y, Rivero-Santana A, Perestelo-Perez L, Duarte-Diaz A, Ramos-Garcia V, Toledo-Chavarri A, Torres-Castano A, Leon-Salas B, Infante-Ventura D, Gonzalez-Hernandez N, Rodriguez-Rodriguez L. Effectiveness of mantra-based meditation on mental health: A systematic review and meta-analysis.

International Journal of Environmental Research and Public Health. 2022 Mar 13;19(6):3380. mdpi.com

Antunes PC, Fraga AB. Integrative mind-body practices: Concept proposal for the field of traditional and complementary medicine. Ciência & Saúde Coletiva. 2021. scielosp.org

Bandealy SS, Sheth NC, Matuella SK, Chaikind JR, Oliva IA, Philip SR, Jones PM, Hoge EA. Mind-body interventions for anxiety disorders: a review of the evidence base for mental health practitioners. Focus. 2021 Jun;19(2):173-83. psychiatryonline.org

Barr KL, Soutor CA, Franklin JM. Mind–Body Therapies. Integrative Dermatology: Practical Applications in Acne and Rosacea. 2021:165-91. [HTML]

Bauer N, Löffler C, Öznur Ö, Uecker C, Keil T, Langhorst J. Mind-body-medicine and comprehensive lifestyle-modification in patients with Crohn's disease—Feasibility of a randomized controlled trial under pandemic circumstances. Frontiers in Integrative Neuroscience. 2022 Aug 23; 16:960301. frontiersin.org

Bhardwaj P, Ahuja N, Malik P, Sethi D, Singh A, Pathania M. Harnessing the Body, Breath, and Mind: Yoga Strategies for Resilience. Burned Out-Exploring the Causes, Consequences, and Solutions of Workplace Stress in Public Service Organizations: Exploring the Causes, Consequences, and Solutions of Workplace Stress in Public Service Organizations. 2025 Apr 10:143. [HTML]

Bhatt D, Kashyap K, Chandravanshi J, Kumar A. Exercise, Yoga and Meditation Positive Impact on those Suffering from Depression and Anxiety Disorders. European Journal of Cardiovascular Medicine. 2024 Apr 1;14(2). [HTML]

Brems C. Understanding the Psychology of Breath and Breathing. InTherapeutic Breathwork: Clinical Science and Practice in Healthcare and Yoga 2024 Oct 11 (pp. 127-171). Cham: Springer Nature Switzerland. [HTML]

Bringmann HC, Bringmann N, Jeitler M, Brunnhuber S, Michalsen A, Sedlmeier P. Meditation-based lifestyle modification: development of an integrative mind-body program for mental health and human flourishing. Complementary Medicine Research. 2021 Jun 14;28(3):252-62. karger.com

Brooks J, Crone JC, Spangler DP. A physiological and dynamical systems model of stress. International Journal of Psychophysiology. 2021 Aug 1; 166:83-91. sciencedirect.com

Buchanan TL, Janelle CM. Fast breathing facilitates reaction time and movement time of a memory-guided force pulse. Human Movement Science. 2021. [HTML]

Buttle H. Measuring a Journey without Goal: Meditation, Spirituality, and Physiology. 2015. ncbi.nlm.nih.gov

Casuso-Holgado MJ, Heredia-Rizo AM, Gonzalez-Garcia P, Muñoz-Fernández MJ, Martinez-Calderon J. Mind–body practices for cancer-related symptoms management: An overview of systematic reviews including one hundred twenty-nine meta-analyses. Supportive Care in Cancer. 2022 Dec;30(12):10335-57. [HTML]

Cerdá A, Boned-Gómez S, Baena-Morales S. Exploring the mind-body connection: Yoga, mindfulness, and mental well-being in adolescent physical education. Education Sciences. 2023. mdpi.com

Chen TL, Chang SC, Huang CY, Wang HH. Effectiveness of mindfulness-based interventions on quality of life and menopausal symptoms in menopausal women: A meta-analysis. Journal of Psychosomatic Research. 2021 Aug 1; 147:110515. [HTML]

Choudhary N. YOGA AS A HOLISTIC APPROACH TO MENTAL HEALTH: A REVIEW OF ITS EFFECTS ON STRESS, ANXIETY, AND DEPRESSION. 2025. amazonaws.com

Corso SJ, O'Malley KY, Subaiya S, Mayall D, Dakwar E. The role of non-ordinary states of consciousness occasioned by mind-body practices in mental health illness. Journal of Affective Disorders. 2023 Aug 15; 335:166-76. [HTML]

Crane RS, Griffith GM. Curriculum considerations. InEssential Resources for Mindfulness Teachers 2021 May 30 (pp. 6-12). Routledge. [HTML]

Danylova TV, Shmarhun VM, Vertel AV, Matyushko BK, Bondarenko AF, Kychkyruk T, Petersen J. Effects of the Eastern mind-body practices on mental health during the COVID-19 pandemic: When East meets West. Wiadomości Lekarskie. 2021 Jan 1;74(11):2850-5. researchgate.net

De Diego-Cordero R, López-Tarrida ÁC, Linero-Narváez C, Galán González-Serna JM. "More spiritual health professionals provide different care": a qualitative study in the field of mental health. InHealthcare 2023 Jan 19 (Vol. 11, No. 3, p. 303). MDPI. mdpi.com

Dix D, Norton K, Griffith GM. Leaders on a mindfulness-based program: experience, impact, and effect on

leadership role. Human Arenas. 2022. springer.com
Dunne PJ, Schubert C. New mind-body interventions that balance human psychoneuroimmunology. Frontiers in psychology. 2021. frontiersin.org
Ege G, Ottemöller FPG, Frisk B. Norwegian music students' perceptions and experiences of challenges and resources for health. Frontiers in Psychology. 2023. frontiersin.org
Engert V, Kok B, Papassotiriou I, Chrousos G et al. Specific reduction in cortisol stress reactivity after social but not attention-based mental training. 2017. [PDF]
Esch T, Stefano GB. The BERN framework of mind-body medicine: integrating self-care, health promotion, resilience, and applied neuroscience. Frontiers in Integrative Neuroscience. 2022. frontiersin.org
Ferrari AJ, Santomauro DF, Aali A, Abate YH, Abbafati C, Abbastabar H, Abd ElHafeez S, Abdelmasseh M, Abd-Elsalam S, Abdollahi A, Abdullahi A. Global incidence, prevalence, years lived with disability (YLDs), disability-adjusted life-years (DALYs), and healthy life expectancy (HALE) for 371 diseases and injuries in 204 countries and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. The Lancet. 2024 May 18;403(10440):2133-61. thelancet.com
Flake JK, Davidson IJ, Wong O, Pek J. Construct validity and the validity of replication studies: A systematic review.. American Psychologist. 2022. researchgate.net
Foster C. Methodological pragmatism in educational research: from qualitative-quantitative to exploratory-confirmatory distinctions. International Journal of Research & Method in Education. 2024 Jan 1;47(1):4-19. tandfonline.com
Frausto O. Vitalist Capitalism, Ethos and Lethalism. Revista de Filosofia Aurora. 2023. scielo.br
Frøjd LA, Munkhaugen J, Moum T, Sverre E, Nordhus IH, Papageorgiou C, Dammen T. Insomnia in patients with coronary heart disease: prevalence and correlates. Journal of Clinical Sleep Medicine. 2021 May 1;17(5):931-8. aasm.org
Galante J, Friedrich C, Dawson AF, Modrego-Alarcón M, Gebbing P, Delgado-Suárez I, Gupta R, Dean L, Dalgleish T, White IR, Jones PB. Mindfulness-based programmes for mental health promotion in adults in nonclinical settings: A systematic review and meta-analysis of randomised controlled trials. PLoS medicine. 2021 Jan 11;18(1): e1003481. plos.org
Garbers S, Umar NQ, Hand RE, Usseglio J, Gold MA, Bruzzese JM. Mind–body integrative health (MBIH) interventions for sleep among adolescents: a scoping review of implementation, participation and outcomes. Adolescent research review. 2022 Dec;7(4):565-89. nih.gov
Gholamrezaei A, Van Diest I, Aziz Q, Vlaeyen JW, Van Oudenhove L. Psychophysiological responses to various slow, deep breathing techniques. Psychophysiology. 2021 Feb;58(2): e13712. maastrichtuniversity.nl
Gilliam EA, Cheung T, Kraemer K, Litrownik D, Wayne PM, Moy ML, Yeh GY. The impact of Tai Chi and mind-body breathing in COPD: Insights from a qualitative sub-study of a randomized controlled trial. PLoS One. 2021 Apr 8;16(4): e0249263. plos.org
Goldberg SB. A common factors perspective on mindfulness-based interventions. Nature Reviews Psychology. 2022. nih.gov
Gross D. The Bio-Orthophotonic Concept of healing energy: Quantum. 2025. cisteijournal.com
Hellem T, Benavides-Vaello S, Taylor-Piliae R. National internet-based survey of the use, barriers, reasons and beliefs of mind-body practices during the early months of the COVID-19 pandemic. Journal of Evidence-Based Integrative Medicine. 2021 Apr 7; 26:2515690X211006332. sagepub.com
Homma I, Phillips AG. Critical roles for breathing in the genesis and modulation of emotional states. Handbook of Clinical Neurology. 2022. [HTML]
Hordvik M, Fletcher T, Haugen AL, Møller L, Engebretsen B. The process (es) of learning about teaching using models-based practice: Pre-service teachers' experiences. European Physical Education Review. 2024:1356336X241282492. sagepub.com
Huang S, Wang Z, Zheng D, Liu L. Anxiety disorder in menopausal women and the intervention efficacy of mindfulness-based stress reduction. American Journal of Translational Research. 2023 Mar 15;15(3):2016. nih.gov
Islam Z, D'Silva A, Raman M, Nasser Y. The role of mind body interventions in the treatment of irritable bowel syndrome and fibromyalgia. Frontiers in psychiatry. 2022. frontiersin.org
Jakovljević M, Bevanda M. INTEGRATIVE MEDICINE: BETWEEN WISHFUL THINKING AND REALITY.

Medicina Academica Integrativa. 2024. sum.ba
Kannan MA, Ab Aziz NA, Ab Rani NS, Abdullah MW, Rashid MH, Shab MS, Ismail NI, Ab Ghani MA, Reza F, Muzaimi M. A review of the holy Quran listening and its neural correlation for its potential as a psycho-spiritual therapy. Heliyon. 2022 Dec 1;8(12). cell.com
Kanti MC, Kumar A. Role of Yoga on Stress. Worldwide International Inter Disciplinary Research. 2022. wiidrj.com
Kelley ML, Strowger M, Gabelmann JM, Vasic S, Rivera IE, Fleming R, Burgin EE, Bravo AJ, Fleming WH, Gaylord SA, Vinci C. A review of empirical treatments focused on mind-body and spiritually grounded complementary practices for moral injury among veterans. Counseling and values. 2024 Apr 29;69(1):65-91. nih.gov
Kempermann G. Embodied prevention. Frontiers in psychology. 2022. frontiersin.org
Klebanova K. Rethinking mindfulness in education within two frameworks: Articulating the "threefold model of mindful wisdom" with the "theory of mental interference". Religions. 2022. mdpi.com
Koushede V, Donovan R. Applying salutogenesis in community-wide mental health promotion. The handbook of salutogenesis. 2022. oapen.org
Kucukosmanoglu HS, Cramer H, Tavakoly R, Moosburner A, Bilc MI. Mind-Body Medicine in the Treatment of Depression: A Narrative Review of Efficacy, Safety and Mechanisms. Current Psychiatry Reports. 2024 Oct 19:1-2. springer.com
L Gerbarg P, P Brown R, C. Streeter C, Katzman M et al. Breath Practices for Survivor and Caregiver Stress, Depression, and Post- traumatic stress disorder: Connection, Co-regulation, Compassion. 2019. [PDF]
Larkey LK, James T, Han S, James DL. Pilot study of Qigong/Tai Chi Easy acute effects of meditative movement, breath focus and "flow" on blood pressure, mood and oxytocin in older adults. Complementary Therapies in Medicine. 2023 Mar 1; 72:102918. sciencedirect.com
Le Rhun A, Caillet P, Lebeaupin M, Duval M, Guilmault L, Anthoine E, Borghi G, Leclère B, Moret L. Mind–body and art therapies impact on emotional regulation in patients with chronic diseases: a pragmatic mixed-methods randomized controlled trial. BMC complementary medicine and therapies. 2023 Sep 28;23(1):344. springer.com
Lee O, Mascarenhas M, Miccio R, Brown-Whitehorn T, Dean A, Erlichman J, Ortiz R. The role of the mind-body connection in children with food reactions and identified adversity: Implications for integrating stress management and resilience strategies in clinical practice. Children. 2023 Mar 16;10(3):563. mdpi.com
Lee SC, Tsai PH, Yu KH, Chan TM. Effects of Mind–Body Interventions on Immune and Neuroendocrine Functions: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Healthcare. 2025. nih.gov
Levasseur M, Naud D. The application of salutogenesis for social support and participation: Toward fostering active and engaged aging at home. The Handbook of Salutogenesis. 2022. oapen.org
Levin M. Technological approach to mind everywhere: an experimentally-grounded framework for understanding diverse bodies and minds. Frontiers in systems neuroscience. 2022. frontiersin.org
Li W, You F, Wang Q, Shen Y et al. Effects of Tai Chi Chuan training on the QoL and psychological well-being in female patients with breast cancer: a systematic review of randomized controlled trials. Frontiers in Oncology. 2023. frontiersin.org
Lim EJ, Hyun EJ. The impacts of pilates and yoga on health-promoting behaviors and subjective health status. International journal of environmental research and public health. 2021 Apr 6;18(7):3802. mdpi.com
Liu H, Cai K, Wang J, Zhang H. The effects of mindfulness-based interventions on anxiety, depression, stress, and mindfulness in menopausal women: A systematic review and meta-analysis. Frontiers in Public Health. 2023. frontiersin.org
Lo HH. Mindfulness and Developmental Needs of Children. Mindfulness for Children, Adolescents, and Families: Integrating Research into Practice. 2024 Feb 8:15-29. [HTML]
Loizzo J. Embodied Practice, the Smart Vagus, and Mind–Brain–Body–World Integration. Advances in Contemplative Psychotherapy. 2023. [HTML]
Lu S, Wei F, Li G. The evolution of the concept of stress and the framework of the stress system. Cell stress. 2021. nih.gov
Lutz A, Chételat G, Collette F, Klimecki OM, Marchant NL, Gonneaud J. The protective effect of mindfulness and compassion meditation practices on ageing: Hypotheses, models and experimental

implementation. Ageing Research Reviews. 2021 Dec 1; 72:101495. sciencedirect.com
Marcia Dernie DPT. Movement for Every Body: An Inclusive Fitness Guide for Better Movement--Build mind-body awareness, overcome exercise barriers, and improve mobility. 2024. [HTML]
Maric V, Mishra J, Ramanathan DS. Using mind-body medicine to reduce the long-term health impacts of COVID-specific chronic stress. Frontiers in Psychiatry. 2021. frontiersin.org
Marino F, Failla C, Carrozza C, Ciminata M et al. Mindfulness-Based Interventions for Physical and Psychological Wellbeing in Cardiovascular Diseases: A Systematic Review and Meta-Analysis. 2021. ncbi.nlm.nih.gov
Martínez-Rubio D, Navarrete J, Montero-Marin J. Feasibility, effectiveness, and mechanisms of a brief mindfulness-and compassion-based program to reduce stress in university students: A pilot randomized controlled trial. International journal of environmental research and public health. 2021 Dec 23;19(1):154. mdpi.com
Matko K, Ott U, Sedlmeier P. What do meditators do when they meditate? Proposing a novel basis for future meditation research. Mindfulness. 2021. springer.com
Menon S. Breathe, Bend, Be: Exploring the Eight Limbs of Yoga for Holistic Harmony. 2024. [HTML]
Mettler J, Zito S, Bastien L, Bloom E, Heath NL. How we teach mindfulness matters: Adolescent development and the importance of informal mindfulness. Journal of School Psychology. 2024 Aug 1; 105:101323. sciencedirect.com
Migliaccio GM, Russo L, Maric M, Padulo J. Sports performance and breathing rate: What is the connection? A narrative review on breathing strategies. Sports. 2023. mdpi.com
Millegan J, Denninger JW, Bui E, Jakubovic RJ, Ram V, Bhakta J, Hiller Lauby MD, Mehta DH, Sager JC, Fricchione G, Sylvia LG. A mind-body program for pain and stress management in active-duty service members and veterans. Psychological services. 2021 May;18(2):186. [HTML]
Miranda S, Marques A. Pilates in noncommunicable diseases: a systematic review of its effects. 2019. [PDF]
Morley G, Field R, Horsburgh CC, Burchill C. Interventions to mitigate moral distress: A systematic review of the literature. International journal of nursing studies. 2021 Sep 1; 121:103984. mghpcs.org
Murray CB, de la Vega R, Murphy LK, Kashikar-Zuck S, Palermo TM. The prevalence of chronic pain in young adults: a systematic review and meta-analysis. Pain. 2022 Sep 1;163(9):e972-84. researchgate.net
Napoli NJ, Rodrigues VR, Davenport PW. Characterizing and modeling breathing dynamics: Flow rate, rhythm, period, and frequency. Frontiers in Physiology. 2022. frontiersin.org
Nguyen TT, Jensen CG, Khoury L, Deleuran B, Blom ES, Breinholt T, Christensen R, Skov L. Effectiveness of mind–body intervention for inflammatory conditions: results from a 26-week randomized, non-blinded, parallel-group trial. Journal of Clinical Medicine. 2021 Jul 14;10(14):3107. mdpi.com
Niharika L, Sharma M, Babu VS, Chahare VW. The Mind-Body Connection in Stress and Immunity: A Systematic Review. European Journal of Cardiovascular Medicine. 2024 Nov 23;14:303-6. healthcare-bulletin.co.uk
O'Connor S, Mayne A, Hood B. Virtual reality-based mindfulness for chronic pain management: a scoping review. Pain Management Nursing. 2022. sciencedirect.com
Oh B, Bae K, Lamoury G, Eade T et al. The Effects of Tai Chi and Qigong on Immune Responses: A Systematic Review and Meta-Analysis. 2020. ncbi.nlm.nih.gov
Oliveira-Cardoso ÉA, Freitas ID, Santos JH, Oliveira WA, Garcia JT, SANTOS MA. Chronic diseases and religiosity/spirituality during the early stages of the COVID-19 pandemic. Estudos de Psicologia (Campinas). 2022 Nov 11;39:e200230. scielo.br
Oman D. Reply: The PHIOMM Framework for Implementing Mindfulness in Public Health, With Groundwork. Mindfulness. 2025. springer.com
P. Howard A. Improved Autonomic Function as a Physiological Mechanism Underlying the Reported Effects of Ashtanga Yoga: Feasibility and Initial Effectiveness Study. 2018. [PDF]
Paley CA, Johnson MI. Perspective on salutogenic approaches to persistent pain with a focus on mindfulness interventions. Frontiers in Pain Research. 2023. frontiersin.org
Parveen A, Kalra S, Jain S. Effects of Pilates on health and well-being of women: a systematic review. Bulletin of Faculty of Physical Therapy. 2023. springer.com
Pattyn N, Beech D, Wilhelmsson J, Kilding H, Mendrek A. Restorative techniques: Mindfulness, relaxation, breathing, and yoga. InHandbook of Mental Performance 2024 (pp. 86-118). Routledge. taylorfrancis.com

Pérez-Fernández JI, Salaberria K, Ruiz de Ocenda Á. Mindfulness-based pain management (MBPM) for chronic pain: A randomized clinical trial. Mindfulness. 2022. springer.com

Powell-Wiley TM, Baumer Y, Baah FO, Baez AS, Farmer N, Mahlobo CT, Pita MA, Potharaju KA, Tamura K, Wallen GR. Social determinants of cardiovascular disease. Circulation research. 2022 Mar 4;130(5):782-99. ahajournals.org

Puri MS, Puri MI. INFLUENCE OF EMOTIONS ON PHYSICAL WELL-BEING. MIND-BODY CONNECTION. 2025. andhraloyolacollege.ac.in

R. . Englund-Helmeke S. Mindfulness and Well-Being. 2014. [PDF]

Rafidi B, Kondapi K, Beestrum M, Basra S, Lio P. Psychological therapies and mind–body techniques in the management of dermatologic diseases: a systematic review. American Journal of Clinical Dermatology. 2022 Nov;23(6):755-73. [HTML]

Ramkissoon H. Body-mind medicine interventions in COVID-19 place confinement for mental, physical and spiritual wellbeing. OBM Integrative and Complementary Medicine. 2021. lidsen.com

Rather LJ. Mind and body in eighteenth century medicine: a study based on Jerome Gaub's De regimine mentis. 2022. [HTML]

Ray D. Somatic Meditation and the Embodied Mind: A Neuropsychological Review. 2025. osf.io

Rodrigues JM, Lopes LT, Gonçalves M, Machado JP. Perceived Health Benefits of Taijiquan and Qigong. balance. 2022. researchgate.net

Rometsch C, Martin A, Junne F, Cosci F. Chronic pain in European adult populations: a systematic review of prevalence and associated clinical features. Pain. 2025. lww.com

Rush CL, Brewer JR, Levey N, Presciutti AM, McDermott K, Pasinski R, Yousif N, Gholston M, Raju V, Greenberg J, Ritchie CS. "Pushed to Their Limits": Health Care Provider Perspectives on Barriers and Facilitators to Implementing a Mind-Body and Activity Program for Older Adults With Chronic Pain in a Community Clinic for the Underserved. Family & Community Health. 2025 Jan 1;48(1):49-56. nih.gov

Salmon JW. Alternative medicines: Popular and policy perspectives. 2022. [HTML]

Santiago C, Gholami SK, Bhojaraja VS, Lim MY, Radhakrishnan AK, Mehta DH. MIND-BODY THERAPIES AND ITS EFFECT ON THE IMMUNE SYSTEM IN CHRONIC DISEASES: A LITERATURE REVIEW: Received 2020-10-16; Accepted 2021-06-02; Published 2021-11-12. Journal of Health and Translational Medicine (JUMMEC). 2022 Jan 20;25(1):97-107. um.edu.my

Santosa A, Rosengren A, Ramasundarahettige C, Rangarajan S, Gulec S, Chifamba J, Lear SA, Poirier P, Yeates KE, Yusuf R, Orlandini A. Psychosocial risk factors and cardiovascular disease and death in a population-based cohort from 21 low-, middle-, and high-income countries. JAMA network open. 2021 Dec 1;4(12):e2138920-. jamanetwork.com

Schepanski S, Ngoumou GB, Koch AK, Schröter M, Roehle R, Seifert G. Mind–body therapies and their interplay with the immune system in children and adolescents: a protocol for a systematic review and meta-analysis. Systematic Reviews. 2025 Apr 4;14(1):78. springer.com

Sharma D, Sharma BR. Aging, Sexuality, and Intimacy. Can Yoga Help? Journal of Psychosexual Health. 2025. sagepub.com

Sharma D, Sharma BR. The impact of yoga and meditation on mental and physical well-being. Journal of Ayurveda and Integrated Medical Sciences. 2024 Jul 23;9(5):144-53. jaims.in

Shirvani E, Parvizi N. Embodied Cognition and the Impact on Women's Mental Health: Exploring the Mind-Body Connection. Tuijin Jishu/Journal of Propulsion Technology. 2023;44(6):2023. researchgate.net

Sinduria S, Sharma A. Researchers in the lab of COVID-19: A scientific Review on the impact of the pandemic on the researchers. shikshasamvad.com. shikshasamvad.com

Stainton P, Danes-Daetz C, Haworth L, Karunanithi SP, Chohan A. Attitudes, knowledge and understanding towards mind-body practices as an asset for social prescribing in higher education. International Journal of Health Promotion and Education. 2025 Mar 4;63(2):96-110. tandfonline.com

Stecher C, Berardi V, Fowers R, Christ J, Chung Y, Huberty J. Identifying app-based meditation habits and the associated mental health benefits: Longitudinal observational study. Journal of Medical Internet Research. 2021 Nov 4;23(11): e27282. jmir.org

Sumantry D, Stewart KE. Meditation, mindfulness, and attention: A meta-analysis. Mindfulness. 2021. [HTML]

Talia Johnson K. Buffering of Physiological and Affective Reactivity by a Single Proactive 5-minute Stress Management Technique. 2019. [PDF]

Tang YY, Tang R. Health neuroscience—How the brain/mind and body affect our health behavior and outcomes. Journal of Integrative Neuroscience. 2024. imrpress.com

Tarnas M, Marszałek A, Kufel-Grabowska J, Marszałek S, Wieliński D, Zieliński J. Effects of Pilates Training on Cardiorespiratory Functions in Medical Conditions-Comprehensive Approach: A Narrative Review. Aging and Disease. 2024 Aug 1;15(4):1771. nih.gov

To MN, Nicotera N, Wang K. To Move or Not to Move: Factors of Mind–Body Practice Engagement in a Population-Based Study. Journal of Integrative and Complementary Medicine. 2025 Apr 1;31(4):358-66. [HTML]

van Dam K. Individual Stress Prevention through Qigong. 2020. ncbi.nlm.nih.gov

Van Denend J, Ford K, Berg P, Edens EL, Cooke J. The body, the mind, and the spirit: Including the spiritual domain in mental health care. Journal of religion and health. 2022 Oct;61(5):3571-88. springer.com

van der Ploeg ES, Bitane RM, Schoones JW, Achterberg WP, Smaling HJ. Mind-body practices for people living with dementia and their family carers: a systematic review. Journal of Complementary and Integrative Medicine. 2025 Mar 13;22(1):15-73. degruyterbrill.com

van Elk M, Fried EI. History repeating: guidelines to address common problems in psychedelic science. Therapeutic Advances in Psychopharmacology. 2023 Sep; 13:20451253231198466. sagepub.com

Virago MC. Art psychotherapy and public health. Public health. 2021. [HTML]

Voss S, Boachie DA, Nieves N, Gothe NP. Mind-body practices, interoception and pain: a scoping review of behavioral and neural correlates. Annals of Medicine. 2023. tandfonline.com

Walter O, Shenaar-Golan V, Routray S. Cross-cultural comparison of how mind-body practice affects emotional intelligence, cognitive well-being, and mental well-being. Frontiers in Psychology. 2021. frontiersin.org

Wang C, Bannuru R, Ramel J, Kupelnick B et al. Tai Chi on psychological well-being: systematic review and meta-analysis. 2010. ncbi.nlm.nih.gov

Wen YR, Shi J, Wang YF, Lin YY, Hu ZY, Lin YT, Wang XQ, Wang YL. Is mind-body exercise beneficial for treating pain, function, and quality of life in middle-aged and old people with chronic pain? A systematic review and meta-analysis. Frontiers in Aging Neuroscience. 2022 Jun 21; 14:921069. frontiersin.org

Wookey E. A systematic review of movement-oriented mind-body interventions and psychoneuroimmunological outcomes for psychological stress and trauma. 2023. pepperdine.edu

Yang G, Li W, Klupp N, Cao H, Liu J, Bensoussan A, Kiat H, Karamacoska D, Chang D. Does tai chi improve psychological well-being and quality of life in patients with cardiovascular disease and/or cardiovascular risk factors? A systematic review. BMC Complementary Medicine and Therapies. 2022 Jan 4;22(1):3. springer.com

Yang H, Li B, Feng L, Zhang Z et al. Effects of health qigong exercise on upper extremity muscle activity, balance function, and quality of life in stroke patients. Frontiers in Neuroscience. 2023. frontiersin.org

Yang HJ, Koh E, Kang Y. Susceptibility of women to cardiovascular disease and the prevention potential of mind–body intervention by changes in neural circuits and cardiovascular physiology. Biomolecules. 2021. nih.gov

Yang HJ, Koh E, Sung MK, Kang H. Changes induced by mind–body intervention including epigenetic marks and its effects on diabetes. International Journal of Molecular Sciences. 2021 Jan 28;22(3):1317. mdpi.com

Yang HJ, Setou N, Koh E. Utilization of Mind–Body Intervention for Integrative Health Care of COVID-19 Patients and Survivors. International Journal of Environmental Research and Public Health. 2022 May 29;19(11):6618. mdpi.com

Yu Z, Yin Y, Wang J, Zhang X, Cai H, Peng F. Efficacy of Pilates on Pain, Functional disorders and Quality of Life in patients with chronic low back Pain: a systematic review and Meta-analysis. International Journal of Environmental Research and Public Health. 2023 Feb 6;20(4):2850. mdpi.com

Yue MA, Weicheng CUI. A comprehensive overview on various mind-body models. Philosophy. 2021. plumazon.com

Zeng Y, Huang R, Zhao L, He X, Mao S. The effectiveness of mind-body therapy and physical training in alleviating depressive symptoms in adult cancer patients: a meta-analysis. Journal of Cancer Research and Clinical Oncology. 2024 Jun 5;150(6):289. springer.com

Zgierska AE, Burzinski CA, Garland EL, Lennon RP, Jamison R, Nakamura Y, Barrett B, Sehgal N, Mirgain SA,

Singles JM, Cowan P. Mindfulness-based therapy compared to cognitive behavioral therapy for opioid-treated chronic low back pain: protocol for a pragmatic randomized controlled trial. Contemporary clinical trials. 2021 Nov 1; 110:106548. [HTML]

Zhang D, Lee EK, Mak EC, Ho CY, Wong SY. Mindfulness-based interventions: an overall review. British medical bulletin. 2021 Jun;138(1):41-57. nih.gov

Zhang Y, Li W, Xu S, Li S, Sun ZH, Zhang M, Zuo Y, Chen S. Global research trends in mind body therapies: a bibliometric analysis. Journal of Translational Medicine. 2025 Mar 24;23(1):365. springer.com

Table 1: Provides A Concise Summary of The Main Mind-Body Practices Discussed in This Review, Their Core Components, Key Physiological Mechanisms, And Representative Health Outcomes.

Mind-body practice	Core components	Key physiological mechanisms	Representative health outcomes
Yoga	Postures, breathing exercises, relaxation, and meditative focus	Reduced sympathetic activation, improved vagal tone, modulation of HPA axis, anti-inflammatory effects	Lower stress and anxiety, improved sleep, reduced blood pressure, better pain control
Meditation (e.g., mindfulness)	Focused attention, open monitoring, non-judgmental awareness of experience	Enhanced prefrontal regulation, reduced amygdala reactivity, decreased cortisol, improved heart-rate variability	Reduced symptoms of depression and anxiety, improved well-being and emotion regulation
Tai chi	Slow, flowing movements synchronized with breathing and attention	Improved balance and proprioception, autonomic regulation, reduced inflammatory markers	Better balance and fall prevention, improved quality of life, reduced stress
Qigong	Gentle movements, breathing regulation, and intention/imagery	Autonomic modulation, improved circulation and oxygenation, stress hormone regulation	Reduced fatigue and stress, perceived energy enhancement, improved mood
Pilates	Core strengthening, controlled movements, posture and alignment	Improved musculoskeletal function, proprioception, and body awareness; possible stress reduction	Enhanced core strength and flexibility, reduced musculoskeletal pain, improved functional capacity