



**International Journal of Biology, Pharmacy
and Allied Sciences (IJBPAS)**

'A Bridge Between Laboratory and Reader'

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**UNDERSTANDING THE MIND BODY MEDICINE AND ITS APPLICATION IN
CLINICAL AND NON-CLINICAL SETTING: A REVIEW**

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Received 15th April 2021; Revised 16th May 2021; Accepted 18th June 2021; Available online 1st March 2022

<https://doi.org/10.31032/IJBPAS/2022/11.3.5901>

ABSTRACT

Objective: To explore the use of Mind-Body Medicine (MBM) in clinical and non-clinical settings.

Methodology: An Intensive literature search was conducted with the objective of understanding the need of the hour for the use of Mind-Body Medicine.

Discussion: When MBM showed broad spectrum in different disorders as an adjunctive or complimentary therapy that significantly improve symptoms and help in effective management of many diseases. MBM is very effective remedy for the various types of cancers. It shows positive effects in ICU patients with psychological stress, insomnia, sleep problems, impaired cognitive performance, parkinson's disease, late life mental illness, heart failure patients, HIV patients, breast cancer patients going through Persistent Post-Surgical Pain (PPSP) and even in healthy individuals. MBM also proved to be beneficial in management of symptoms present in any chronic medical condition.

Conclusions: Barriers in healthy practicing of MBM should be properly addressed. MBM in itself has proved to be very effective in management of symptoms in chronic diseases. Evidence suggests that in patients or even in healthy individuals it has proven to improve quality of life and overall lifestyle.

Keywords: Mind Body Medicine, Complementary medicine, Alternative Medicine

INTRODUCTION

Most health care professionals consider Mind Body Medicine (MBM) as a field of medicine in which health and condition of the body is influenced by the processes of the mind. But according to MBM practitioners more accurate description is when mind and body are considered to be a single unit, as the health of one influence the health of other. This also helps in acknowledging the bidirectional relationship of mind and body [1].

Most of the complaints in primary care are perhaps of psycho-social distress, for which Mind Body medicine (MBM) is well equipped. As studies prove that MBM is most effective for common problems (e.g. chronic pain, anxiety disorders, insomnia) mostly handled by primary care providers. Mind body Medicine therapy consists of various techniques. The most well used and researched ones includes Meditation, Hypnosis, Guided Imagery, Biofeedback and Relaxation therapy [2].

Meditation: Defined as self-regulation of attention and is approximately 3000 years old. There are two types of meditation concentration based and mindfulness based. Transcendental meditation and Relaxation Response are part of concentration meditation. Whereas mindfulness-based

meditation is represented by M.B.S.R. (Mindfulness Based Stress Reduction). Both forms of meditation have a common foundation which is focusing one's attention a particular object of choice. And when the attention wanders away effort is made to return the attention. In concentration meditation that object can be a mantra, an image or a thing. In mindfulness-based meditation initially focus is on breath work but as one progresses further other aspects are added such as physical sensations, different emotional states [1-3].

Hypnosis: Hypnosis can be defined as a technique where a patient experiences changes in behavior, thought, perception, and sensation when suggested by a therapist. This change is accompanied by states of selective focus, enhanced imagery, diffusion and relaxation. Earlier in the mid 1700's Mesmer described hypnosis as the result of magnetism exuding from its practitioner rather than the patient. According to recent studies the escalation of a mindset into a hypnotized state is considered as the result of increased suggestibility. Using hypnosis as an adjunct to standard therapy for obesity and CBT in cases of insomnia, hypertension, anxiety, obesity, chronic pain, duodenal ulcer, snake phobia and at last athletic

performance respectively showed that outcomes of all the participants receiving hypnotherapy were better than the outcomes of the participants not receiving this therapy [4-5].

Guided Imagery: Guided imagery is a technique in which subject uses its full imaginative capacity of the mind to such an extent that it affects the subject's physical, emotional and spiritual state. The goal of this intervention is to achieve specific biological effects that may not be easily accessible to the conscious mind. Now G.I. can be general or specific for e.g. a therapist may suggest the patient to imagine a calm relaxing beach, alternatively in some cases therapist may also suggest the patient to imagine immune cells attacking the cancer cells at a specific region. Both of these types of G.I. work quite differently and can be explained with some good examples. For instance in some cases the therapist may evoke many of the senses through direct provocation such as requesting the patient to smell the tropical or salty air, feel the warmth of the sun against the skin etc. Now for instance in some cases the therapist may ask the patient to imagine immune cells attacking the cancer cells in the right ascending colon and left lobe of the liver. Mostly this intervention requires proper guidance. Guidance by the therapist may be

provided in person or through prerecorded audiotapes produced by the therapist himself. With time patient might escalate to self-guided imagery. Each session usually lasts for around 30 minutes [1, 6].

Biofeedback: This is a therapeutic method in which the outcome varies accordingly with the aptitude and the medical condition of the patient being treated. Technically through this method the patient is provided with conscious control over a physiological function that naturally is not under conscious control. This control is achieved with the help of technology which presents the patient with the level of activity of a physiological parameter in visual or auditory form. These physiological parameters range from muscle tension, skin resistance, brain wave activity and skin temperature as well. Biofeedback is most established in the field of gastroenterology. Moreover biofeedback has contributed potentially in stroke rehabilitation. Studies show that biofeedback has produced significant benefit in cases of migraine, tension and headache. This is therefore first-line therapy for many disorders of elimination [1, 7].

Relaxation Therapy: Technically there are a lot of relaxation therapies in MBM and studies state that relaxation naturally is an element of other MBM techniques like

Hypnosis, meditation and yoga. Here we are going to narrow it down to that one Relaxation technique that is extensively researched and used globally i.e. Jacobson's Progressive Muscle Relaxation technique (JPMR). In this technique patient is required to tense and relax different muscle groups in very specific order. And studies suggest that this helps in improving quality of life by inducing a relaxation response [1, 8].

Current Scenario and Need for Mind Body Medicine in Healthcare Sector

Mind-Body Medicine is a field that has sparked interest of various Health care personnel over the decades as, the results that were produced by some simple practices were quite astonishing. From a Public health point of view Western Medicine has proved its worth by tackling various challenges through rapid advances in both Pharmacotherapy and Medical procedures. But technically western medicine alone is poorly equipped to neutralize the battle against stress and stress induced disease progression and aggravation. This is where Mind-Body medicine comes into motion not only as an adjunctive therapy in disease management in case of chronic diseases found in clinical setting but also as tool to manage stress in healthy subjects present in a non-clinical setting. According to a study

produced in Journal of Clinical Epidemiology, it is stated that statistically, heaviest burden on the health care system is the burden of chronic diseases as they consume 86% of the total funding and at the same time are also the leading cause of death and disability in United states. Interestingly, epidemiological data base suggests that about many of these chronic diseases can be prevented. To be accurate this study states that 80% premature heart diseases, type 2 diabetes mellitus, stroke and an amazingly high percentage i.e. 40% of cancer cases can be prevented by modifying the known risk factors [1-3].

The behavioral risk factors include unhealthy diet, lack of physical activity and exercise, unhealthy or overuse use of alcohol and tobacco. Which means a healthy lifestyle can help in preventing the risk of exposure to these behavioral risk factors and for healthy lifestyle stress needs to be properly addressed and managed [9]. This can be explained through a study published in American journal of Physiology, which stated that through introducing meditation (a form of Mind-Body Medicine) to 36 subjects, each of them serving as their own control, provided us with the information that made us realize that why some of these techniques were an essential part of ancient traditional healing

systems. A brief glimpse of results that were produced and stated in this study suggested that there was decreased oxygen consumption even decreased Carbon dioxide elimination, moreover decrease in both arterial blood pH as well as base excess was found. Interestingly enough the blood lactate levels were also found to be decreased. EEG stated increased intensity of slow alpha waves with occasional increased theta wave activity. Notable results further included lowered arterial blood pressure and heart rate. Also, it suggested initiation of cascade of physiological effects that were hypo metabolic in nature. Hypo-metabolic physiological state can be characterized by the physiological changes that occur during sleep or hibernation and are often considered difficult to produce when compared with hyper-metabolic physiological changes that are characterized by increased oxygen consumption and is often accompanied by stressful situations [10-11]. That increased Alpha brain wave activity signifies a deep relaxed mental state, which also occurs in a healthy sleep wake cycle but, the most researched effects of this particular brainwave activity are of the relaxed mental state where the subject is at rest, with closed eyes and is free from the feeling of being tired or asleep. Various studies signify on the

importance of relation between increased Alpha wave activity and improved cognitive performance which would be further discussed in detail [12].

Application of Mind-Body Medicine in clinical setting and Non-Clinical setting

Sleep problems tend to affect the physical and emotional well-being of a person and also is fundamentally associated with immune function. Evidence has proved that Mind Body Medicine techniques have proved to be useful in improving the sleep problems faced by the cancer patients. In this study the author had analyzed data from 2017 US National Health Interview Survey (NHIS). And it was seen that various studies regarding patients with cancer demonstrated an improvement in sleep by practicing Mindfulness Based Stress Reduction (M.B.S.R.), Tai Chi and Yoga. Yoga was considered the second most leading MBM technique used moreover Tai chi and mindfulness-based meditation was not found to be that widespread and universally present [13-14].

In geriatric population (aged above 60) it is known to have a significant impact and improvement in cognitive performance. It is also stated that different mind body exercises produce effect in different cognitive domains. This can be used as a very useful

tool altogether. According to this study, Meditation works on improving attention, global cognition and working memory from a moderate to large extent. Further Qi-Gong improves global cognition, short term memory and working memory from a moderate to large extent. Tai chi works on improving executive function to a small extent. Whereas yoga works on improving executive functioning to a small extent but works on processing speed to a very large extent [15].

On a molecular level constant exposure to chronic stress, high levels of stress not only have a direct impact on cellular aging but also on inflammatory and chromosomal processes. Furthermore, impact on telomere lengths is also reported and this is intimately connected to variety of chronic disease conditions. In this study, it was stated that Relaxation Response (Part of Mind Body medicine) is a physiological opponent of stress response and can further affect chromosomal and telomere processes, cellular aging in addition to, modulation of inflammatory response [16]. Mind-Body exercises have produced not only immediate but moderate to large beneficial effects as well. These effects can be noted as improvement in functional mobility, postural instability, and motor function among

subjects with mild to moderate Parkinson's disease [17].

Yoga or Mindfulness (Mind body medicine techniques) has even proved useful as positive strategies in mitigating ADHD symptoms in children and adolescents. There are many applications of mind body medicine in neurology. Therapies like hypnosis and meditation tend to alleviate and improve symptoms of general pain and lower the need of anesthetics. Hypnosis has proven to produce change in pain reports in case of analgesia and is considered to be superior to other non-pharmacological therapies [18]. Studies state that various pain syndromes can be managed using mind body medicine interventions. Symptoms of chronic back pain are said to be improved through yoga, therapeutic eurhythmy, relaxation training and breathing techniques. In case of chronic type headaches, clinical trials have proved that relaxation training significantly reduced the symptom of headache when compared to different therapies like talk therapy, self-monitoring, even a muscle relaxant (chlormezanone) and at last in case subject opts for no treatment. Another study proved that in case of mixed headaches, biofeedback in combination with pharmacotherapy (amitriptyline/propranolol) was found to be more effective in management when

compared to, pharmacotherapy as the only treatment option. In cases of fibromyalgia potential evidence suggests that mind body medicine in addition with exercise and antidepressants is the most effective treatment option. Study suggests that in case multiple sclerosis significant improvement was seen when fatigue measures were analyzed in subjects undergoing yoga as a Mind body intervention. Similarly, positive results were seen in cases of pelvic floor muscle dysfunction, hyperventilation, and epilepsy when subjects were introduced to various techniques of mind body medicine [19-20].

These mind body medicine techniques are also found to be useful for reducing FCR (Fear of Cancer Recurrence) and help in improving quality of life from small to medium extent. Optimal integration of mind body medicine will help in management of uncertainties and fears that mostly surfaces in patients who survive cancer [21]. Mind body interventions have high potential in managing late-life mental illness and cognitive function. As stated in a study from The American Journal of Geriatric Psychiatry Tai-chi and associated practices were also prevention of decline in cognitive performance and may also prove useful in management of late life depression and

anxiety [22]. Mind body interventions can also be utilized in patients of intensive care units. Exploratory study suggested that it is feasible to conduct mind body session in addition to Pharmacotherapy and medical procedure. This will help the patient in dealing with psychological stress [23].

Stroke survivors often undergo psychological stress which is often neglected as clinical research mostly focusses on motor disability, speech and language deficits and mostly on cognitive dysfunction. But the psychological stressors are often not addressed properly, these stressors may result in post stroke depression, post stroke anxiety and post-traumatic stress disorder. MBM can help in modulation of inflammatory biomarkers and can help in improvement post stroke sleep disturbances [24]. In a study, Tai-Chi was conducted as Mind body therapy in patients of heart failure and within a short period of time significant improvement was seen in 6 min walks, quality of life and even decreased natriuretic peptide in brain. A prospective study also suggested significant improvement in exertion done during physical activity and decreased plasma norepinephrine [25].

In patients with HIV, a combination of minimum three or more mind body therapies / relaxation techniques in addition to cognitive behavioral strategies could help in

proper management of psychological and physical symptoms, moreover improve the subject's quality of life. Evidence supports that deep breathing in combination with body scan, guided imagery, autogenic training and acupuncture could be suggested to patients with H.I.V. and gastrointestinal symptoms. Ashtanga Vinyasa could be used to manage arterial blood pressure in pre-hypertensive people with HIV and display cardiovascular risk factors [26].

A compelling feature of mind body medicine is that it's simple and can easily be integrated in daily activities of life. For a healthy individual it would provide long term effects on healthy inflammation [27]. PTSD in military war veterans were found significantly improve through simple mind body techniques like seated/gentle yoga, breathing exercises, breath-work and meditation. Even secondary problems associated with PTSD such as depression, anxiety, sleep quality and mindfulness improved significantly [28].

Qigong mind body exercise has proven to manage a broad range of psycho-social stressors and also provides with physical benefits by improving the symptoms such as pain, fatigue, anxiety, depression in breast cancer survivors with Persistent Post-Surgical Pain (PPSP). As a result, quality of

life of these subjects was significantly improved [29]. Comprehensive Mind Body interventions as complementary or adjunct therapy have proven to be very helpful in management of chronic medical symptoms [30].

Major Barrier in Current Perspective Towards Mind Body Medicine (MBM)

The recent surveys show that even though there is considerable acceptance towards Mind-Body medicine techniques (e.g. biofeedback, relaxation, meditation and hypnosis) among primary health care professionals but still a significant amount of these physicians tend to overlook these therapies despite their belief in the evidence stating the same. These attitudes among professionals result in translational blocks both in practice and training. This further results in failure of prescription of these treatments causing threat to the funding for basic research in clinical science of MBM [31].

CONCLUSION

Mind Body medicine is not a new concept. The role of MBM in the treatment of various disorder has become well established over the past two decades. In recent years, the management of various diseases with MBM has been area of interest. MBM has wide variety of application in non-clinical setting

and even a wider application in clinical setting. Through this review it can be seen that MBM should can be used as adjunctive or complementary therapy as it results in faster and more effective management of many diseases. We advance the suggestion that MBM may fulfill the therapeutic need for the treatment of various disorders.

ACKNOWLEDGMENTS

Authors are thankful to management of M.M. College of Pharmacy, Maharishi Markandeshwar (Deemed to be University), Mullana (Ambala), India for encouragement and necessary facilities support.

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