

Therapeutic Application of Mindfulness-Based Stress Reduction (MBSR) in Fibromyalgia (FM)

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Abstract

In the management of fibromyalgia, there is a need to reduce dependency on drugs with adverse effects and addiction potential as well as lessen the physical and psychological symptoms in the patient. Introduced in the late 1970s, mindfulness-based stress reduction (MBSR) utilizes nonsectarian practices, including body awareness, seated or walking meditation, yoga, and prayer. The adjunct use of one or more of these methods has proved helpful for specific patients in noticing and controlling stressors and triggers in fibromyalgia (FM) and in some cases, reducing their dependency on medicines with adverse effects. Although currently, there is no medically-established protocol for the use of mindfulness-based interventions (MBIs) in the treatment of FM, specific factors (such as cortisol levels) are showing improvement with MBI. Considering the adverse effects of drugs approved to treat FM, MBIs should be researched further for their application in FM.

Keywords: Adverse Effects; Amitriptyline; Cortisol Levels; Fibromyalgia; Meditation; Mindfulness; Opioids; Prayer; Yoga

Abbreviations

CBT: Cognitive-Behavioral Therapy; EULAR: European League Against Rheumatism; FDA: U.S. Food and Drug Administration; FM: Fibromyalgia; MBI: Mindfulness-Based Intervention; MBCT: Mindfulness-Based Cognitive Therapy; MBSR: Mindfulness-Based Stress Reduction; MORE: Mindfulness-Oriented Recovery Enhancement; RCT: Randomized Controlled Trial; SNRI: Selective Norepinephrine Reuptake Inhibitor; SSRI: Selective Serotonin Reuptake Inhibitor

Preface

According to Hafid and Kerna (2019) in their published review on MBSR in chronic pain: In the management of [neuromusculoskeletal] disorders, there is a need to reduce dependency on drugs with adverse effects and discover and apply adjunct therapies and methods for more effective outcomes with medical treatment. Introduced in the late 1970s, mindfulness-based stress reduction (MBSR)—or mindfulness-based intervention (MBI)—utilizes nonsectarian practices, including body awareness, seated or walking meditation, yoga, and prayer. The adjunct use of one or more of these methods has proved helpful for specific patients in noticing and controlling stressors and triggers to their conditions, and in some cases, reducing their dependency on medicines with adverse effects and resulting in more effective outcomes to their treatment [1].

Introduction

Mindfulness-based stress reduction (MBSR) or mindfulness-based intervention (MBI) is composed of methods based on historical beliefs, traditions, and practices, including but not limited to Buddhism, Shambhala, Vipassana, and Zen ideologies. A prominent figure in the Western adaptation of Eastern philosophies, beliefs, and practices in MBSR and MBI, Jon Kabat-Zinn describes “mindfulness” as the capacity to maintain mental openness regarding tolerance and a nonjudgmental focus in the present moment [2].

Other scholars have characterized “mindfulness” as a blend of awareness and focus on fostering self-consciousness or self-awareness and emotional “control” (paradoxically by dismissing the control of a state of being). MBSR and MBI emphasize neutral, nonjudgemental attitudes and perceptions; in a pathological sense, harmful perceptions or states of being may promulgate and sustain a negative-feedback cycle reinforcing an adverse state of mind or condition, such as fibromyalgia (FM) [2,3].

The theoretical rationale for the application of MBSR (or MBI) is based on attention-discipline or attention-control via various methods, such as body awareness, meditation, yoga, and or prayer. MBSR can be practiced in an organized or casual setting, including instructor-led discussion, attention-centered technique, seated meditation, and yoga [1,2]. Individuals who participate in MBSR find an enhanced ability to cope with stressful situations, especially in terms of responding with adaptive strategies—in this case, for FM [1,3].

In the western world, MBSR was developed and promulgated in the late 1970s by Jon Kabat-Zinn at the University of Massachusetts Medical Center [4,5]. The origins of MBSR include specific cultural practices and religious beliefs. However, MBSR interventions do not adhere to or demand specific cultural practices or religious beliefs from its users or healthcare practitioners who recommend or prescribe them.

Western medicine is slowly uncovering a scientific basis for the application of MBSR as adjunctive therapy for specific conditions, which may prove useful in treating FM. Applying MBSR as adjunctive therapy in FM patients may have the advantage of not only ameliorating or eliminating the distress experienced by patients but also in reducing or eliminating dependence on pharmaceutical agents that have adverse effects [1].

Discussion

Etiology of fibromyalgia (FM)

Fibromyalgia is a chronic condition that affects 3.4% of females within the United States and 4.8% of men worldwide [2]. FM is an “elusive” syndrome that presents a diversity of symptoms, including weakness, nonrestorative sleep, fatigue, and mood alterations [6]. FM is characterized by six months or longer of widespread pain with at least 11 of 18 tender points, typically accompanied by weakness, psychological disturbances, sleep disruption, and other somatic symptoms [6]. Despite these observations, the underlying pathophysiology of FM is not well explained, and currently, the condition is considered noncurable. Nonetheless, the recognition and diagnosis of FM have improved throughout the last decade [5].

Pros and cons of current FM treatment

The European League Against Rheumatism (EULAR) states that first-line therapy for FM should include nonpharmacological agents. Also, EULAR advocates for using pain reduction as the primary parameter in determining or measuring FM resolution [7]. To date, three medications have gained approval by the U.S. Food and Drug Administration (FDA) to treat FM: 1) pregabalin, a voltage-dependent presynaptic calcium channel binder; 2) selective serotonin reuptake inhibitors (SSRIs); and 3) selective norepinephrine reuptake inhibitors (SNRIs). However, most studies conducted regarding pharmacotherapy for FM used amitriptyline, a nonselective 5-HT and NE reuptake inhibitor. Thus, amitriptyline is commonly prescribed for FM [8].

Therapy-based interventions, such as behavioral, cognitive, and mindfulness practices, can discriminately modulate specific brain function and chemistry without altering other regions of the body [9-11]. Pharmacotherapy is unable to provide this level of specificity due to distributive drug properties. Subsequently, the treatment guidelines for FM tend to combine pharmacological and therapy-based treatment, as dual-therapy has demonstrated superiority over mono-therapy [5,8].

Application of MBSR therapy in FM

The use of MBSR appears to have a positive impact in treating FM; however, the exact mechanism of action of MBSR in FM remains unclear [11]. A meta-analysis of twelve randomized controlled trials (RCTs) utilizing MBSR and MBIs in chronic pain patients, including many FM patients, showed significant improvement in symptoms of depression [8]. Also, sixteen studies, which looked at mental health-related quality of life and mindfulness meditation, showed significant quality of life improvement with MBI, compared to support groups, education, stress management, and waitlist controls [8]. Nonetheless, successful treatment methods for FM utilize a multi-therapy approach, which appears to better address pain, psychological disturbances, and sleep quality.

Current medications for FM treat symptoms but are not curative [5]. Mindfulness practices can assist patients in adapting to stressful circumstances, which may translate into decreased symptoms in FM patients [9]. With promising outcomes in the treatment of FM with the application of MBSR, a blending of MBSR and cognitive-behavioral therapy (CBT) has resulted in mindfulness-based cognitive therapy (MBCT). Also, acceptance and commitment therapy (ACT), has shown beneficial effects in several psychiatric conditions and may prove useful in FM [10,11].

Physical exercise and CBT have demonstrated some success in treating FM. CBT proved superior when comparing pain ratings with other behavioral interventions [11]. Nonetheless, MBSR adjunctively applied or blended with CBT, such as in MBCT, may play an essential role in the future treatment of FM [4]. In a laboratory setting, FM patients who underwent MBSR therapy showed positive changes in cortisol levels. Researchers continue to examine this reduced cortisol result with MBIs in FM [10]. With the establishment of mindfulness-oriented recovery enhancement (MORE), studies have shown MORE to reduce the need for opioid medication in chronic pain (CP) patients. This reduction in needed opioids in CP patients bodes well for FM patients [12].

Limitations of MBIs in the treatment of FM

A significant limitation in the treatment of FM is the lack of knowledge of FM on a pathophysiologic, mechanistic, and cellular level. Thus, it is opined that future research explores the relationship of cellular signaling within the body's systems that are involved in the pathogenesis of FM. In doing so, the practice of medicine in regard to FM may move from an amelioration-model to a curative-model in FM. Precise and established guidelines for the application of MBSR in FM will eventually be needed.

Conclusion

According to Hafid and Kerna (2019), in their published review of MBSR in chronic pain, mindfulness practices have been used in various forms throughout human history to gain self-awareness and a more profound sense of connection to the human "spirit" or a creator or creative force. Western medicine is beginning to seek a scientific basis for the application of MBSR as adjunctive therapy for specific conditions [1]. MBSR methods may have an advantage in addressing FM by lessening symptoms and avoiding or minimizing the need for drugs that have adverse or addictive effects. Currently, there is no standard medical protocol or guidelines in applying mindfulness-based stress reduction or mindfulness-based intervention in the treatment of FM. This lack of medical protocol makes MBSR application uncertain and challenging. However, for specific fibromyalgia patients, mindfulness-based stress reduction may prove helpful in reducing or eliminating the symptoms of fibromyalgia.

Conflict of Interest Statement

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

Supplementary Note

Healthcare providers interested in integrating MBSR methods into their practices should consider the following resources:

Mindfulness-Based Stress Reduction, Professional Training-Mindfulness-Based Stress Reduction, Curriculum Guide and Supporting Materials, Integrating Mindfulness Meditation into Health Care (<https://www.umassmed.edu/globalassets/center-for-mindfulness/documents/mbsr-curriculum-guide-2017.pdf>).

Palouse Mindfulness, Mindfulness-Based Stress Reduction (<https://palousemindfulness.com>).

References

1. Hafid A, Kerna NA. "Adjunct Application of Mindfulness-Based Stress Reduction (MBSR) in Chronic Pain Syndrome (CPS)". *EC Neurology* 11.11 (2019): 01-03.
2. Merkes M. "Mindfulness-based stress reduction for people with chronic diseases". *Australian Journal of Primary Health* 16.3 (2010): 200-210. <https://www.ncbi.nlm.nih.gov/pubmed/20815988>
3. Cash E., et al. "Mindfulness Meditation Alleviates Fibromyalgia Symptoms in Women: Results of a Randomized Clinical Trial". *Annals of Behavioral Medicine* 49.3 (2015): 319-330. <https://www.ncbi.nlm.nih.gov/pubmed/25425224>
4. Khusid MA and Vythilingam M. "The Emerging Role of Mindfulness Meditation as Effective Self-Management Strategy, Part 1: Clinical Implications for Depression, Post-Traumatic Stress Disorder, and Anxiety". *Military Medicine* 181.9 (2016): 961-968. <https://www.ncbi.nlm.nih.gov/pubmed/27612338>
5. Santorelli SF Kabat-Zinn J. "Mindfulness-Based Stress Reduction, Professional Training-Mindfulness-Based Stress Reduction, Curriculum Guide and Supporting Materials, Integrating Mindfulness Meditation into Health Care". Massachusetts: Center for Mindfulness in Medicine, Health Care, and Society, University of Massachusetts (2007). <https://www.umassmed.edu/globalassets/center-for-mindfulness/documents/mbsr-curriculum-guide-2017.pdf>
6. Garland EL and Black DS. "Mindfulness for Chronic Pain and Prescription Opioid Misuse: Novel Mechanisms and Unresolved Issues". *Substance Use and Misuse* 49.5 (2014): 608-611. <https://www.ncbi.nlm.nih.gov/pubmed/24611857>
7. Macfarlane G., et al. "Eular revised recommendations for the management of fibromyalgia". *Annals of the Rheumatic Diseases* 76.2 (2016): 318. <https://ard.bmj.com/content/76/2/318>
8. Dale R and Stacey B. "Multimodal Treatment of Chronic Pain". *Medical Clinics of North America* 100.1 (2016): 55-64. <https://www.ncbi.nlm.nih.gov/pubmed/26614719>
9. Haugmark T., et al. "Mindfulness- and acceptance-based interventions for patients with fibromyalgia – A systematic review and meta-analyses". *PLoS One* 14.9 (2019): e0221897. <https://www.ncbi.nlm.nih.gov/pubmed/31479478>
10. Schmidt-Wilcke., et al. "New Insights into the Pathophysiology and Treatment of Fibromyalgia". *Biomedicines* 5.2 (2017): E22. <https://www.ncbi.nlm.nih.gov/pubmed/28536365>
11. Adler-Neal L and Zeidan F. "Mindfulness Meditation for Fibromyalgia: Mechanistic and Clinical Considerations". *Current Rheumatology Reports* 19.9 (2017): 59. <https://www.ncbi.nlm.nih.gov/pubmed/28752493>
12. Hilton L., et al. "Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis". *Annals of Behavioral Medicine* 51.2 (2017): 199-213. <https://www.ncbi.nlm.nih.gov/pubmed/27658913>

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