

## Purpose

To identify the benefits and effectiveness of mindfulness-based interventions (MBIs) on psychological wellbeing and quality of life for individuals with Multiple Sclerosis (MS)

## Multiple Sclerosis

- Individuals with MS can experience increased **fatigue, stress, anxiety, depression, and sleep disturbances** which can negatively impact health-related quality of life (HRQOL) and disease progression<sup>2,3,6,4</sup>
- Higher lifetime prevalence of depression (36-54% vs.16%) and anxiety disorders (36% vs. 29%), compared to general US population<sup>6</sup>
- Current medical treatments do not adequately address HRQOL<sup>4</sup>

## Mindfulness-Based Interventions

- **Mindfulness:** the practice of bringing non-judgmental awareness to one's present moment experience
- **Mindfulness-Based Stress Reduction (MBSR):** an 8-week protocol developed by Kabat-Zinn involving mindful breathing, mindful body awareness, and mindful movement. Protocol emphasizes daily practice<sup>7</sup>
- **Body-Affective Mindfulness (BAM):** mindful awareness, mindful relationships, sensorimotor psychotherapy practices<sup>2</sup>

## Methods

A systematic search was undertaken on PubMed using the following methodology:

- Search Terms: (mindfulness[MeSH Major Topic] OR meditation) AND multiple sclerosis[MeSH Major Topic] AND (psychosocial OR wellbeing OR "quality of life")
- Inclusion Factors: Randomized Control Trial within 10 years
- Meta-analyses and systematic reviews were also reviewed
- **7 prioritized RCTs** were analyzed to answer the objectives

## Literature Review Results

Authors	Intervention & Control	Findings
Bogosian et al. (2015)	Intervention: MBSR and cognitive therapy, tailored to MS. Delivered online. 1hr/wk; 8 weeks  Waitlist control	Significant improvements in distress, depression, anxiety, and psychological QOL; most improvements were maintained at 3 months post-intervention. The authors found that MBI reduced care costs.
Carletto et al. (2017)	Intervention: BAM 3hr/wk; 8 weeks 1 all day retreat  Control: MS psychoeducation, which included relaxation exercises & stretching	Significant improvements, favoring MBI intervention, in depression, illness perception and QOL, with lasting benefit to depression at 6-months post-intervention. Both interventions were similarly effective in reducing anxiety and perceived stress.
Cavalera et al. (2019)	Intervention: MBSR; tailored to MS. Delivered online. 1x/wk; 8 weeks  Control: MS psychoeducation, which included stress management & relaxation	Significant improvements, favoring MBI intervention, in QOL, anxiety, depression, sleep. Between group differences were no longer significant at 6-months post-intervention.
Grossman et al. (2010)	Intervention: MBSR 2.5hr/wk; 8 weeks 1 all day retreat  Control: Usual Care	Significant improvements in QOL, depression, fatigue, and anxiety. Majority of improvements were maintained at 6-months post-intervention.
Kolahkaj & Zargar, (2015)	Intervention: MBSR 2hr/wk; 8 weeks  Control: Usual Care	Significant reduction in stress, anxiety, and depression at post-intervention and improvements were maintained at 2-months post-intervention.
Senders et al. (2019)	Intervention: MBSR 2hr/wk; 8 weeks 1 all day retreat  Control: MS psychoeducation	Significant improvements in perceived stress, anxiety, depression, fatigue, and resilience in both groups, which were maintained at 12-months post-intervention. Greater improvements with MBSR, but between group differences were not significant.
Simpson, Mair, & Mercer, (2017)	Intervention: MBSR 2.5hr/wk/wk; 8 weeks  Waitlist control	Improvements, with a large effect size. in perceived stress, depression, positive affect, anxiety, and self-compassion. Large effect size was maintained for positive affect, anxiety, and self-compassion at 3-months post-intervention.

## Discussion

- Feasible, low-cost, and well-received intervention that can be adapted to meet the needs of individual living with varied MS symptom severity
- Strong evidence for the effectiveness of MBIs at improving **perceived stress, depression, anxiety, and psychological dimensions of HRQOL**
- Emerging evidence that MBIs may reduce distress and improve fatigue, resilience, self-compassion, and sleep
- MBIs may **positively influence illness perception**, which could have spillover impacts for disease self-management

## Implications for Practice

- Integrate mindfulness concepts and practices into **patient education** for self-regulation, symptom (fatigue, stress, pain) management, and sleep routines
- Emerging evidence supports **MBIs delivered online**, which could further increase the accessibility of these interventions<sup>1,3</sup>
- Connect patients to community resources (virtual or in person) to support a consistent mindfulness practice
- Assist clients in building healthy habits and routines related to mindfulness practice so benefits are maintained long-term

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## References

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