

## Effect of Yoga on QOL in Individuals with Multiple Sclerosis

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**Number of Articles:** 6

### Summary of Research Findings

Multiple sclerosis (MS) is a disease of the central nervous system that produces a variety of cognitive and physical symptoms with unpredictable onset. Examples of symptoms may include fatigue, visual deficits, and mobility impairments. The varied and often taxing nature of the disease can decrease an individual's quality of life significantly (Hassanpour-Dehkordi & Jivad, 2014). There is currently no cure for MS, but a variety of interventions are utilized to manage symptoms (Ahmadi, Nikbakh, Arastoo, & Habibi, 2010). Yoga is one such intervention that uses a mind-body approach (Oken et al., 2004). Through various breathing exercises, poses, and stretching, yoga has been found to decrease physical symptoms of pain, increase both physical and cognitive function, and improve overall psychological well-being (Ahmadi et al., 2010; Doulatabad, Nooreyan, Doulatabad, & Noubandegani, 2013; Garrett, Hogan, Larkin, Saunders, Jakeman, & Coote, 2013a; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004). Alternative methods are necessary to explore because current, traditional methods (drugs and exercise therapy) are not yielding consistently effective and sufficient results (Garrett et al., 2013a; Garrett et al., 2013b; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004). This review seeks to explore the use of yoga as an intervention for improving the quality of life in individuals with MS.

This literature review included six experimental design studies examining the effects of yoga on improving the quality of life in individuals with MS. The age of participants ranged from 32 years to 49 years, with only two of the six studies including men (Garrett et al., 2013a; Oken et al., 2004). Each study implemented a different form of the yoga intervention, including Hatha (Ahmadi et al., 2010; Doulatabad et al., 2013), Pranayama, Raja (Doulatabad et al., 2013), unspecified "body-centering" and "joint freeing" series (Garrett et al., 2013a; Garrett et al., 2013b), and Iyengar (Oken et al., 2004). However, all six studies shared common elements of breathing exercises and various poses, broken up by periodic rest breaks. Intervention groups ranged from 8 to 30 participants. The intervention sessions ranged from 60-90 minutes, 1-3 times a week for 2-6 months. Three of the six studies implemented additional intervention groups for comparison (Garrett et al., 2013a; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004). Alternative interventions included weight training and aerobic exercise (Garrett et al., 2013a), walking (Hassanpour-Dehkordi & Jivad, 2014), and bicycling (Oken et al., 2004). Five of the six studies included a control group for comparison, which received no intervention at all for the duration of the study (Ahmadi et al., 2010; Doulatabad et al., 2013; Garrett et al., 2013a; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004). The study with no control group was a follow-up of Garrett's (2013) original intervention study to determine if the benefits had lasted three months after the program without continued practice (Garrett et al., 2013b).

Quality of life was measured using standardized self-report questionnaires focusing on three major domains—physical, cognitive and psychological (Ahmadi et al., 2010; Doulatabad et al., 2013; Garrett et al., 2013a; Garrett et al., 2013b; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004). All six studies found significant improvements in various domains of quality of life in individuals with MS after the completion of a yoga intervention. Specifically, participants reported significant increases in their physical function, psychological well-being, cognitive function, and overall quality of life, as well as a significant decrease in pain (Ahmadi et al., 2010; Doulatabad et al., 2013; Garrett et al., 2013a). However, Garrett (2013b) found that only psychological well-being and fatigue remained significantly improved among the participants at the three-month follow-up and suggested that continued yoga practice is necessary for lasting benefits in both physical and cognitive domains. Moreover, researchers reported that participants in the yoga group showed greater significant improvements in quality of life, compared to individuals in the control group receiving no intervention (Ahmadi et al., 2010; Doulatabad et al., 2013; Garrett et al., 2013a; Hassanpour-Dehkordi & Jivad, 2014). Participants in the alternative interventions (i.e. weight training, aerobic exercise, walking, swimming and cycling) also reported significant improvements in physical and psychological well-being (Garrett et al., 2013a), as well as significantly improved overall quality of life (Hassanpour-Dehkordi & Jivad, 2014). There were, however, no significant differences between participants' quality of life in yoga and alternative intervention groups.

Limitations existed for all six articles in this literature review. Four of the six studies only tested women, which may not allow the results to generalize to men (Ahmadi et al., 2010; Doulatabad et al., 2013; Garrett et al., 2013b; Hassanpour-Dehkordi & Jivad, 2014). All six of the studies relied on self-reported measures, which often include some amount of bias and/or error. Additionally, self-report may be skewed by the group undergoing yoga treatment if there is no interest in the intervention. Garrett et al. (2013b) reported that no control group existed for comparison, as it seemed unethical to deprive individuals from an intervention after the noted improvements during the first 3 months. Their follow-up study discontinued all interventions for 3 months prior to data collection, allowing the gradual deterioration caused by MS to become an additional variable (Garrett et al., 2013b). Research regarding yoga as an intervention for MS is scarce, as it has only been implemented in recent years. It is important to acknowledge the study results with the recognition of some study limitations, including a lack of evidence for males, potentially biased self-report, and natural attrition from MS.

Despite the limitations that exist in this literature review, it is evident that yoga has a positive effect on quality of life for individuals with multiple sclerosis in terms of physical, cognitive, and psychological well-being. While this mind-body exercise is not a cure, it appears to be an effective intervention for symptom management to improve quality of life.

### Knowledge Translation Plan

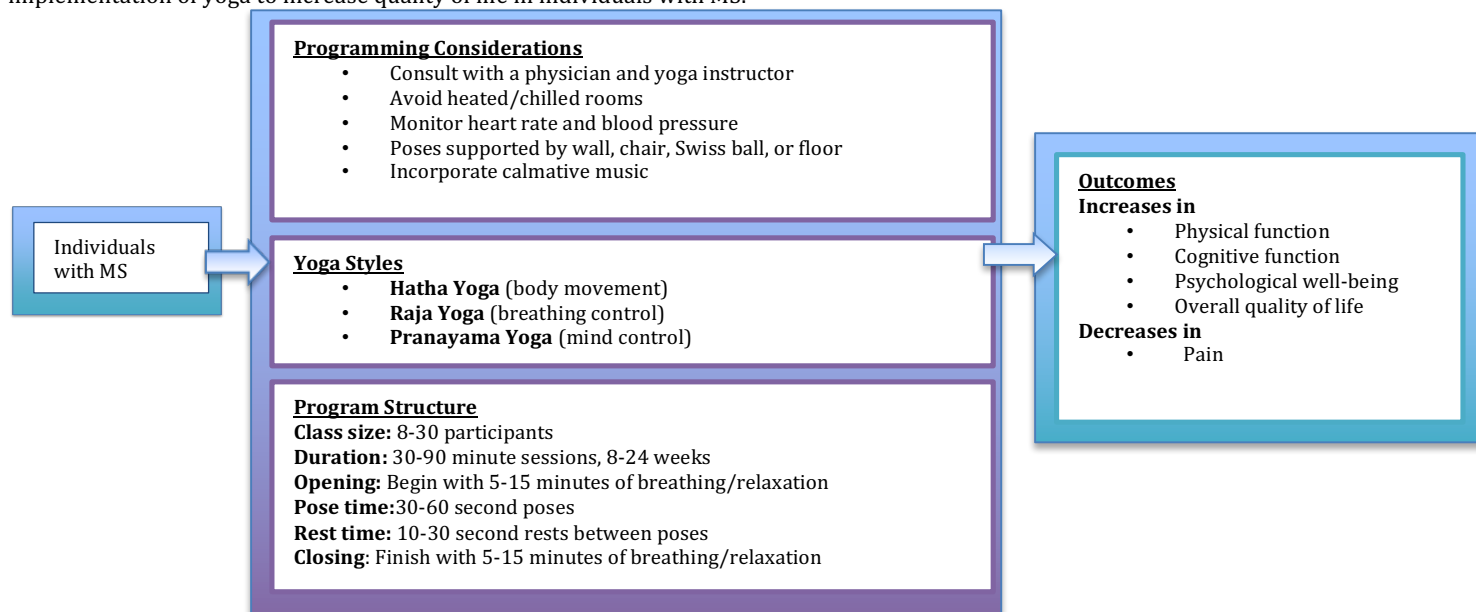
Individuals with multiple sclerosis experience a variety of symptoms, with no predictable onset or pattern. Because a cure has not yet been discovered, various interventions are employed to decrease those symptoms and slow the progression of the disease. Yoga has been shown to increase the quality of life in individuals with MS—physically, cognitively, and psychologically (Ahmadi et al., 2010; Doulatabad et al., 2013). A recreational therapist should consider using this mind-body exercise to increase physical and cognitive function, psychological well-being, and to decrease pain.

Based on the reviewed studies, recreational therapists are recommended to implement yoga interventions for 30-90 minute sessions over an 8-24 week period. It should be in a group-setting format, ranging from 8 to 30 participants, and located in a room large enough for all participants to move freely. Yoga can be conducted in any setting, including community centers, local gyms, or health centers (Garrett et al., 2013a). The structure of the session should begin and conclude with 5-15 minutes of breathing/relaxation. The yoga implementation should last 20-60 minutes and poses should be held for 30-60 seconds with 10-30 seconds of rest between poses (Ahmadi et al., 2010). Individual home yoga practice should be encouraged for participants, and booklets with visual depictions of various poses may be provided for facilitation (Oken et al., 2004).

Recreational therapists should encourage their participants to consult with their physician prior to yoga participation to determine if yoga is a safe activity for them to engage in. The recreational therapists should also monitor heart rate and blood pressure both before and after engagement in a yoga intervention to avoid overexertion and look for signs of concern, such as hypertension or tachycardia (Hassanpour-Dehkordi & Jivad, 2014). Be conscious of sweating and/or overheating as this may lead to fatigue, pain, or an exacerbation of the condition for an individual with MS. Both heated and chilled rooms should be avoided as extreme temperatures may worsen symptoms (Ahmadi et al., 2010). Recreational therapists should carefully consider safety contraindications related to MS when creating the yoga program, and it may be beneficial to consult with the individuals' physicians in case additional medical concerns must be addressed (Ahmadi et al., 2010; Hassanpour-Dehkordi & Jivad, 2014; Oken et al., 2004).

Many different styles of yoga exist, three of which include Hatha, Raja, and Pranayama. Hatha yoga involves slow body movement, Raja yoga involves mind control, and Pranayama yoga involves breathing control (Doulatabad et al., 2013). Recreational therapists can use any of these three yoga styles, but it is recommended that therapists always include breathing exercise, posture performance, and meditation (Doulatabad et al., 2013; Oken et al., 2004). Recreational therapists are encouraged to begin yoga sessions with calmative music to begin the relaxation process (Ahmadi et al., 2010). Each session should begin and end with a breathing or mediation exercise. Participants should engage in each pose for 10-30 seconds, taking 30-60 second rest breaks between poses (Ahmadi et al., 2010; Oken et al., 2004). Modifications should be made on an individual basis to maximize participation within the allotted time period. To accommodate to the needs of each individual with MS, recreational therapists can consider using a chair, wall, Swiss ball, or the floor to support participants when performing yoga poses (Ahmadi et al., 2010; Oken et al., 2004). It is important to adjust the order of poses and/or exercises in order to limit the energy exerted to switch from lying to seated positions (Oken et al., 2004).

Because yoga is a relatively new intervention for individuals with MS, it is important for recreational therapists to continue to document all outcomes with standardized assessment tools. Continued practice of yoga is suggested to maintain the long-lasting results of improved quality of life (Garrett et al., 2013b). Alternative interventions (i.e., weight training, aerobic exercise, walking, swimming and cycling) have also shown desired outcomes (Garrett et al., 2013a; Hassanpour-Dehkordi & Jivad, 2014), therefore more studies with larger sample sizes are necessary to compare which intervention is best for improving quality of life in the given population. When selecting an intervention, the participant's interest should direct their treatment. Expanding the evidence base will allow greater support for the implementation of yoga to increase quality of life in individuals with MS.



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