Purpose: Declines in cognitive abilities are among the most devastating effects of multiple sclerosis (MS). Cognitive impairment may occur early in the course of the disease before the onset of any physical impairment and severely affect social functioning and role functions such as employment and parenting. Clinicians are seeking ways to help their patients with MS manage and improve their cognitive abilities. This feasibility study examined performance in both neurocognitive test performance and self-reported cognitive functioning in people with MS who utilized a web-based cognitive training program.

Methods: Nine individuals with MS, who participated in a previous study of cognitive impairments, were recruited for eight weeks of practice with the Lumosity web-based software cognitive training program. Most of the participants were married (7), college educated (7), females (7). Two thirds were non-Hispanic Whites. Average age was 50 (range: 35 – 59) and average years since MS diagnosis was 16.6 (range: 9 - 28). Five of the nine were unemployed due to disability. Participants worked with games designed to build memory, attention, speed, flexibility, and problem solving. A nurse facilitator phoned participants weekly to address any problems encountered with the online program and encourage continued practice. Participants completed practice logs noting dates and length of practice. Neurocognitive performance tests and self-report measures of cognitive functioning were administered prior to exposure to the Lumosity program and at the conclusion of the eight weeks of training.

Findings: The majority of participants improved their performance on three of the six-neurocognitive tests. Eight of the nine individuals increased self-reported cognitive abilities, and seven reported decreased cognitive concerns. Seven of the nine participants met, or exceeded, the recommended practice guideline of 1080 minutes over the eight-week program. At least eight of the nine respondents agreed the computer program directions were clear, the computer activities kept their interest, and the activities helped them improve their cognitive abilities. All would recommend the program to others.

Conclusions: Results of this feasibility study show the promise of using a web-based computer program to improve cognitive function in persons with MS. While results generally suggest that people with MS can improve their cognitive functioning after exposure to a web-based cognitive training program, a randomized clinical trial is needed to determine that changes observed here can be attributed to exposure to the cognitive training program.

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