

# Improving Health Care Literacy Among Patients with MS through a Flipped Classroom Model

J. Felker<sup>1</sup>, M. Mazzotta<sup>1</sup>, A. Mendez Colmenares<sup>2</sup>, J. Skoda<sup>3</sup>, K. Keefer<sup>1</sup>, A. Miravalle<sup>4</sup>

<sup>1</sup>The Brain Health Center of the Rockies, Fort Collins, CO, <sup>2</sup>Colorado State University, Fort Collins, CO,

<sup>3</sup>Advanced Neurology of Colorado, Fort Collins, CO, <sup>4</sup>Neurology, Advanced Neurology of Colorado, Fort Collins, CO.

## Introduction

The Brain Health Center of the Rockies provides educational tools and exposure to health care providers aiming to fill an unmet need for patients with MS in the community. Our program is designed to provide a multidisciplinary approach that is customized via participant interviews to meet the individual needs of our patients. To provide a more active learning method, we have selected a Flipped Classroom strategy in which learners encounter information before class, freeing class time for activities that involve higher order thinking. To our knowledge, the utilization of a Flipped Classroom approach has not been used in patient education to date.

## Goal

This project will assess improvements in Health Care Literacy in individuals with MS who participated in the Flipped Classroom Brain Health Program.

## Methods

24 patients with MS participated in the program. Demographics include age, sex, race and disease duration (Table 1). All participants completed sixteen pre-recorded online modules on topics including Disease Modifying Therapies, Fatigue, Cognition, Depression/Anxiety, Living with MS/Caregiver Support, Pregnancy and Family Planning, Social Security Disability and Employment, New Therapies, Exercise, PT, OT, Sleep, and Nutrition. At the completion of these modules, patients had access to 6 live virtual 1-hour sessions. Each session had a balance between didactic, experiential learning and a Q&A portion (Figure 1).

Table 1. Self-Reported Participant Demographics	
Characteristic	Total Population (N = 24)
<b>Age – yrs</b>	
Mean	44
Median (range)	40 (20-60)
<b>Female Sex – no. (%)</b>	20 (83.3%)
<b>Disease Duration – no (%)</b>	
> 1 year	8 (33.3%)
1-3 years	3 (12.5%)
4-8 years	5 (20.8%)
9-15 years	3 (12.5%)
16+ years	5 (20.8%)
<b>Race – no. (%)</b>	
Caucasian	23 (95.8%)
African American	1 (4.2%)

Figure 1. Overview of Live Sessions

Brain Health Program
Session 1: MS 101
Session 2: Fatigue and Cognition in MS
Session 3: The Role of Exercise and PT
Session 4: Music Therapy
Session 5: Nutrition in MS
Session 6: Brain Reserve and Brain Health

Figure 2. Level of Health Literacy Before and After Intervention

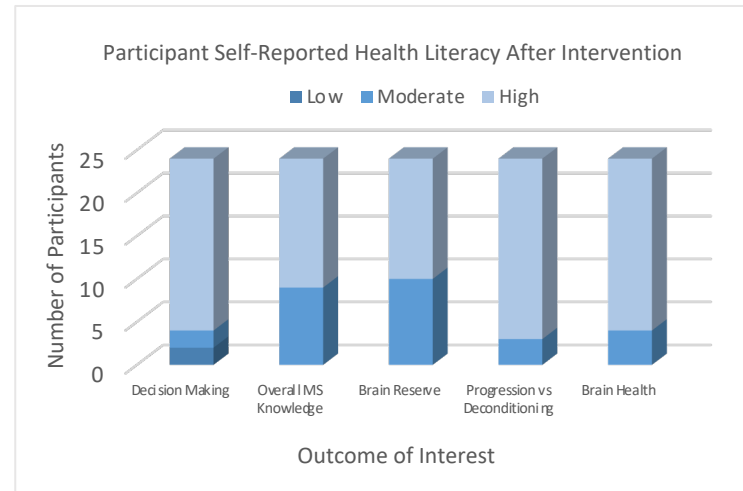
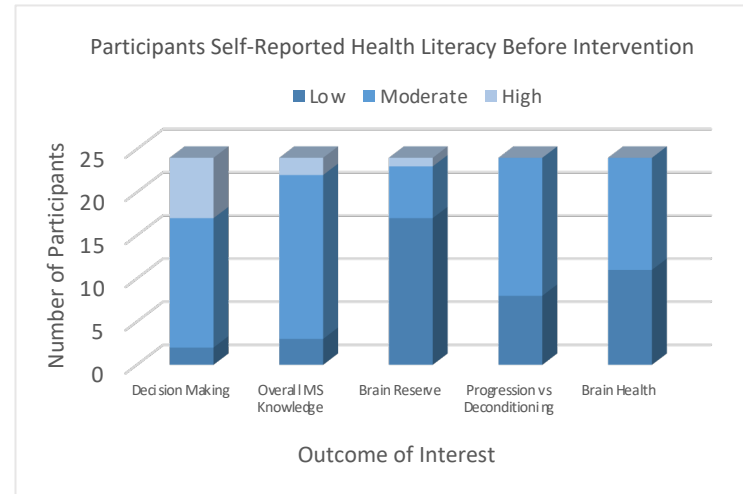
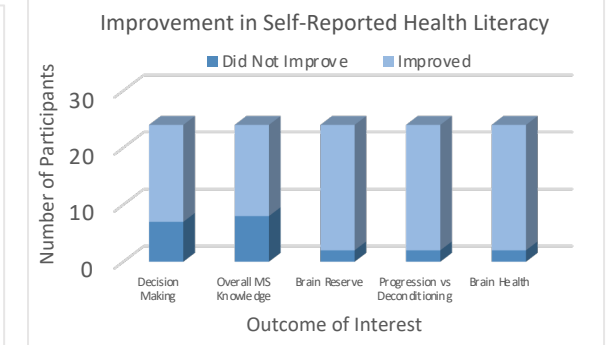


Figure 3. Health Literacy Improvement Across All Participants



## Results

At baseline, and after the completion of the program all participants completed a brief Health Care Literacy in MS questionnaire. There was an improvement between patients with the highest level of health literacy pre-intervention versus post-intervention for each outcome as seen in Figure 2. 71% of participants improved their understanding of MS to make educated decisions, 67% felt more confident in their knowledge of MS, and 92% felt more familiar with the concept of Brain Reserve, Brain Health, and the difference between MS progression and deconditioning (Figure 3). Additionally, 100% of participants rated each session as good, very good, or excellent and up to 90% of participants indicated that they felt more empowered to live with MS because of what they learned.

## Conclusions

The flipped classroom model of the Brain Health Program proved to be an effective method to improve Health Care Literacy across a variety of key concepts.