The Relationship Between Physical Activity, Fatigue, Mood, and Perceived Cognitive Impairment in Adults with Multiple Sclerosis

Chantel D. Mayo¹, Kelly Miksche¹, Kristen Attwell-Pope², Jodie R. Gawryluk¹

¹Department of Psychology, University of Victoria, British Columbia, Canada; ²Department of Neurology, Island Health, British Columbia, Canada

Introduction

- Multiple Sclerosis (MS) is a chronic neurological disease typically diagnosed in young adulthood¹.
- Most individuals require costly treatment for motor and sensory symptoms as well as fatigue, depression, and cognitive decline².
- Many continue to have debilitating MS symptoms and side effects from medication³.
- There is a crucial need for low cost behavioural treatments that are effective in reducing MS symptoms.
- Physical activity has shown promise in managing other neurological disorders and it has been hypothesized that physical activity may be neuroprotective⁴,⁵.

Objective

- To investigate the relationship between physical activity and MS symptoms of fatigue, depression, and perceived cognitive decline.

Methods

Recruitment

- 600 invitations sent out via Island Health’s permission to contact.
- 477 did not respond to the invitation to participate.
- 123 potential participants contacted the research team.
- 7 did not provide mailing address, or were otherwise unavailable.
- 116 study packages sent out via mail.
- 24 did not return study packages to the research team.
- 92 study packages returned to the research team.

Measures

- Physical activity and MS symptoms were assessed using the following measures⁶-⁹:
  - Physical Activity: Godin Leisure-Time Exercise Questionnaire (GLTEQ).
  - Fatigue: Modified Fatigue Impact Scale (MFIS).
  - Mood: Patient Health Questionnaire (PHQ-9).
  - Cognition: Patient Deficit Questionnaire (PDQ).

Statistical Analyses

- Descriptive and correlational statistics were performed with R Studio.
- Partial correlation coefficients were calculated to investigate the relationship between GLTEQ and MFIS, PHQ-9, and PDQ, controlling for age.

Results

- There was a significant negative relationship between reported physical activity and fatigue and depression scores, but not perceived cognitive impairment:
  - Fatigue: $r = -0.34, p = 0.002$
  - Depression: $r = -0.23, p = 0.034$
  - Cognitive Impairment: $r = -0.19, p = 0.08$

Conclusions

- Individuals with MS who reported more strenuous and/or frequent physical activity reported fewer symptoms of fatigue and depression.
- Physical activity holds promise as an additional behavioural treatment to better manage MS symptoms.

References