Modifiable Predictors of Perceived Cognitive Abilities in Persons with Longstanding Multiple Sclerosis

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Background. Research suggests that common MS-related symptoms such as stress, depression, fatigue and pain may have negative effects on individual’s perceptions of their cognitive abilities. While these symptoms are prevalent in persons with MS, they may also be viewed as modifiable within the clinical setting. However, little is known about how these symptoms may predict perceived cognitive abilities in persons with longstanding (greater than 15 years) MS.

Objective. To explore if modifiable disease related symptoms (stress, fatigue, pain) are significant predictors of self-rated cognitive abilities while controlling for age, disease duration, and years of education in persons MS who have been diagnosed for more than 15 years.

Methods. A sample of 300 persons with MS (88% female, mean age 64.3 ± 9.0; mean disease duration 27.3 ± 6.6 years) in an ongoing longitudinal health promotion study completed the Perceived Stress Scale, the CES-Depression Scale, and three NIH PROMIS scales: Pain Intensity, Fatigue, and Cognitive Abilities. Reliability coefficients for all summated scales exceeded .85. Descriptive statistics, Pearson correlations, and hierarchical regression were used to analyze the data.

Results. Perceived stress, depressive symptoms, and fatigue scores were highly correlated with scores of the measure of perceived cognitive abilities (r = -.58, -.58, and -.61, p<.001 respectively) while pain intensity was moderately correlated (r = -.37, p<.001). Thus, as negative disease-related symptoms increase, perceived cognitive abilities decrease. Age, disease duration, and years of education explained 4.3% of the variability in perceived cognitive abilities. Perceived stress, depressive symptoms, fatigue, and pain together explained significant additional variability in cognitive abilities [ΔR=.436, F (4,287)= 60.13, p<.001].

Conclusion. Findings support the expected theoretical relationships between modifiable symptoms and perceived cognitive abilities and are consistent with research findings in other populations. Importantly, the symptoms discussed here (perceived stress, depressive symptoms, and fatigue) are largely modifiable with behavioral interventions and could be targets for future interventions to improve perceived cognitive abilities in persons with longstanding MS.

Acknowledgment: This project was supported by the James R. Dougherty Jr. Centennial Professorship in Nursing and Grant F31 NR014601, NINR, NIH