

Title:

Perceived Cognitive Deficits in Persons With Multiple Sclerosis (MS)

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Session Title:

Cognitive Impairment Effects on Clinical Outcomes

Slot:

M 15: Sunday, 30 July 2017: 10:15 AM-11:00 AM

Scheduled Time:

10:15 AM

Keywords:

cognitive deficits, multiple sclerosis and self-report

References:

Amato, M. P., Langdon, D., Montalban, X., Benedict, R. H. B., DeLuca, J., Krupp, L. B., . . . Comi, G. (2013). Treatment of cognitive impairment in multiple sclerosis: Position paper. *Journal of Neurology*, 260(6), 1452-1468. doi:10.1007/s00415-012-6678-0

Honan, C.A., Brown, R.F., & Batchelor, J. (2015). Perceived cognitive difficulties and cognitive test performance as predictors of employment outcomes in people with multiple sclerosis. *Journal of the International Neuropsychological Society*, 21, 156-168. <http://dx.doi.org/10.1017/S1355617715000053>.

Multiple sclerosis: just the facts. (2016, July). Retrieved from: <http://www.nationalmssociety.org/NationalMSSociety/media/MSNationalFiles/Brochures/Brochure-Just-the-Facts.pdf>

Pardini, M., Bergamino, M., Bommarito, G., Bonzano, L., Luigi Mancardi, G., & Roccatagliata, L. (2014). Structural correlates of subjective and objective memory performance in multiple sclerosis. *Hippocampus*, 24(4), 436-445. doi:10.1002/hipo.22237

Samartzis, L., Gavala, E., Zoukos, Y., Aspiotis, A., & Thomaides, T. (2014). Perceived cognitive decline in multiple sclerosis impacts quality of life independently of depression. *Rehabilitation Research & Practice*, v.2014:128751. doi:10.1155/2014/128751.

Strober, L. B., Binder, A., Nikelshpur, O. M., Chiaravalloti, N., & DeLuca, J. (2016). The perceived deficits questionnaire: Perception, deficit, or distress? *International Journal of MS Care*, 18(4), 183-190.

Abstract Summary:

Cognitive dysfunction is potentially the most disabling symptom for those with MS, often with a devastating impact on patients and families. This session will provide findings regarding perceived cognitive deficits for a large community-based sample participating in a multisite randomized clinical trial of a cognitive rehabilitation intervention.

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
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1. The learner will be able to discuss the most common cognitive deficits experienced by persons with MS.	1. Evidence regarding the incidence of various cognitive deficits (e.g memory, attention, executive function) for persons with MS will be reviewed. 2. Impact of cognitive impairment on the individuals with MS and their family will be presented.
1. The learner will be able to critique the measurement of cognitive deficits using the Perceived Deficits Questionnaire.	1. Difficulties in identification and measurement of cognitive symptoms will be discussed. 2. Self-reports of cognitive deficits from a community sample (N=183) of persons with MS will be reviewed and the measurement instrument, the Perceived Deficits Questionnaire (PDQ), will be critiqued. 3. Clinical and research implications for use of the PDQ will be described.

Abstract Text:

Purpose:

Multiple sclerosis (MS), a chronic autoimmune-mediated demyelinating disease of the central nervous system, is estimated to affect the lives of 2.3 million persons around the world. (National MS Society, 2016). As many as 75% of those with MS may experience some cognitive dysfunction, potentially the most disabling symptom for those with MS and their families (Amato et al., 2013). Difficulties with learning and recalling new information, attention, processing speed, and verbal fluency are the most common cognitive deficits reported by those with MS.

Historically, researchers studying those with MS have found either no relationships or weak relationships between cognitive performance measures (neuropsychological tests) and self-report measures of cognitive function (Strober, Binder, Nikelshpur, Chiaravalloti & DeLuca, 2016). In addition, health care providers may question self-reports of cognitive dysfunction because the accuracy of patients' accounts might be confounded by symptoms such as fatigue and depression. Although some have suggested that the weak correlations between self-report and cognitive performance measures indicate that self-reports are not "accurate" depictions of a person's cognitive status, an alternative explanation is that performance and perception might reflect different aspects of cognition. Recent studies with fMRI imaging have shown that self-reported deficits in memory are correlated with structural alterations in the hippocampus of persons with MS (Pardini et al., 2014). This suggests that self-reports of cognitive function do indeed reflect structural and functional changes in the brain.

A better understanding of self-reported cognitive function in persons with MS is necessary as these measures are more useful in clinical settings than neuropsychological assessments which require specifically trained personnel and substantial time to administer. Self-report measures can be given in a short period of time and represent the individual's perception of everyday cognitive function. The Perceived Deficits Questionnaire (PDQ) is one self-report instrument that is used to evaluate cognitive function in persons with MS (Strober et al., 2016). The purpose of this study was to assess the cognitive deficits reported by a community-based sample of persons with MS (N=183) and to explore relationships between the PDQ and other measures of cognitive function in persons with MS.

Methods:

Following approval by the Institutional Review Board, data were collected as part of the screening process and baseline data collection for a multi-site randomized clinical trial of a cognitive rehabilitation intervention for persons with MS. Recruitment for the study occurred in three major metropolitan areas in the southwestern United States through contacts with neurologists, self-help groups, and the National MS Society. All potential participants responded to the 20-item PDQ as part of the phone screening for study eligibility and completed the additional measures described below at baseline. Analyses of data included descriptive statistics, internal consistency reliability analysis of the PDQ, and correlational analyses between the PDQ scores and other self-report measures (The PROMIS Short Form v2.0—Cognitive Function Abilities, the Center for Epidemiologic Studies-Depression Scale, the Memory Strategies scale, the Compensatory Cognitive Strategies scale) and a neuropsychological testing battery that included five performance tests of verbal fluency and word finding, verbal learning and memory; nonverbal learning and memory, auditory information processing speed and flexibility and a measure of complex scanning and visual tracking.

The PDQ, is part of the MS Quality of Life Inventory (MSQLI), a health-related quality of life instrument designed specifically for people who have MS. The PDQ's 20 items assess the frequency of different types of cognitive problems that have occurred over the past 4 weeks. Respondents rate each item on a scale of 0 (*never*) to 4 (*almost always*). Total scores can range from 0 to 80, with higher scores indicating greater frequency of cognitive problems.

Results:

The average age of the 183 participants was 49.35 years (SD 7.96) and they had been diagnosed with MS for an average of 12.64 years (SD 7.97). The majority (87%) were women and most participants reported they were white (75%), married or living with a significant other (63%), and unemployed (66%). Most were well educated and over half had earned a bachelor's or graduate degree (58%).

The means and standard deviations for each of the 20 PDQ items were ranked in order of the frequency that they were experienced. The most frequently reported cognitive complaints were (1) "I find my mind drifting"; (2) Trouble holding phone numbers in my head even for a few seconds"; and (3) "I forget what I came into the room for". Cronbach's alpha, a measure of internal consistency reliability, was .91 for the PDQ scale. There were significant ($p < .05$) small to moderate correlations between PDQ scores and the measures of self-rated cognitive abilities, depressive symptoms and use of memory and other cognitive strategies, but not to the neuropsychological performance tests.

Conclusion:

The assessment of cognitive dysfunction is essential in MS treatment and management, especially because perceived cognitive function is a significant predictor of quality of life (Samartzis, Gavala, Zoukous, Aspiotis & Thomaides, 2014). The PDQ is a reliable, valid measure of perceived cognitive difficulties in the domains of attention, prospective memory, retrospective memory, and planning/organization, and it can be easily administered. Furthermore, the PDQ is feasible to use in clinical settings because it can be administered in approximately 5 minutes and easily scored. The significant relationships between the PDQ and depressive symptoms and the utilization of compensatory strategies are clinically relevant.