The association between cognition, fatigue, and social role participation among patients with multiple sclerosis

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Introduction

Multiple sclerosis (MS), a demyelinating disease of the central nervous system, manifests in both externally evident and invisible impairments(1). External symptoms of MS typically present physically, such as vision loss, gait disturbance or muscle weakness, whereas "invisible" symptoms may present in a variety of ways such as mood disturbance, cognitive impairment or fatigue(2). Research has demonstrated that these "invisible" symptoms also have a significant impact on both the functioning and Quality of Life (QoL) of people with MS (PwMS), despite large gaps in both awareness and treatment(2). Additional research on these "invisible" but important impairments has further identified that social role participation (SRP) is another important, but rarely considered, aspect of daily living affected in PwMS(3). SRP refers to an individual's ability to meet social expectations (e.g., familial, occupational) and has been demonstrated to be negatively impacted in PwMS(3).

Objective: To examine the predictive impact of such varied "invisible" symptoms (e.g., cognitive impairment) and patient related outcomes (PROs) in PwMS to further investigate the impact of these aspects of MS on SRP.

Methods

People with MS (n = 434) were assessed using a computerized cognitive testing battery (CCTB) and self-report measures to evaluate cognition and physical PROs, and both mental health (e.g., depression, anxiety, social role participation), and fatigue PROs.

Results

A hierarchical regression analysis was conducted to determine the predictive impact of demographic factors, cognition, and PROs (physical, mental, fatigue) on SRP. Analyses found that the addition of PROs to a hierarchical model increased predictive power from 25% to 75%, suggesting that physical, mental, and fatigue "invisible" symptoms of MS impact PwMS's ability to engage in typical social roles.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.114[a]	0.013	-0.005	7.728
2	.867[b]	0.752	0.73	4.008
3	.873[c]	0.762	0.734	3.976

a. Predictors: (Constant), Years of Education, Gender, Marital Status, Ethnicity / Race, Age

b. Predictors: (Constant), Years of Education, Gender, Marital Status, Ethnicity / Race, Age, HADS-D, BRCS-4, PDDS, MFIS psychosocial, Emotional Behavioral, UCLA-3, Brief Illness, Meaning and Purpose, Cognitive Function, Stigma, HADS-A, PHQ-2, MFIS physical, MFIS cognitive, MSIS Psychological, MSIS Physical, Multiple Sclerosis Impact Scale MSIS-29, MFIS global

c. Predictors: (Constant), Years of Education, Gender, Marital Status, Ethnicity / Race, Age, HADS-D, BRCS-4, PDDS, MFIS psychosocial, Emotional Behavioral, UCLA-3, Brief Illness, Meaning and Purpose, Cognitive Function, Stigma, HADS-A, PHQ-2, MFIS physical, MFIS cognitive, MSIS Psychological, MSIS Physical, Multiple Sclerosis Impact Scale MSIS-29, MFIS global, Visual Spatial, Verbal Function, Attention, Memory, Motor Skills, Information Processing Speed, Executive Function

Conclusions

The findings of this analysis support the importance of considering impairments to SRP in PwMS, both generally and in combination with other symptoms. Future studies should continue to explore the impact of MS on SRP as it allows for more comprehensive understandings and interventions to support PwMS proactively to enhance QoL and outcomes.

References

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