

Impact of Infections on the Health & Well-Being of People with Multiple Sclerosis

Hollie Schmidt, MS, Sara Loud, MSEE, MBA, Stephanie Buxhoeveden, PhD, MSN, FNP-BC, MSCN, Accelerated Cure Project for Multiple Sclerosis

Infection burden in MS extends beyond susceptibility and medical severity, affecting symptoms, daily function, finances, healthcare use, and participation in daily life – even when hospitalization is uncommon.

Introduction

- People with MS are at an increased risk for infections due to immune dysregulation, disease-modifying therapies (DMTs), and comorbidities.
- Most research focuses on infection rates and severity based on EHR and claims records, which do not capture the full impact on people's lives.
- Infections can worsen MS symptoms, disrupt daily function, lead to treatment changes, and result in financial and psychosocial consequences.

A broader, patient-centered approach is needed to understand and address the true burden of infections in MS.

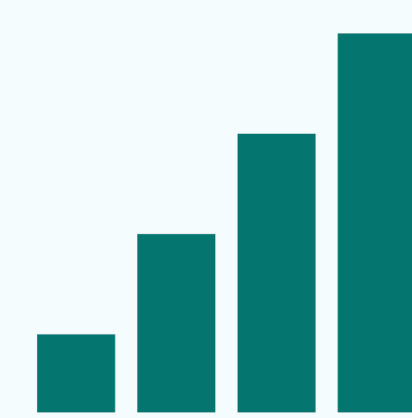
Objectives and Aims



1. Determine the rate of infections in people with MS, including those that do not involve a medical encounter



2. Quantify the **multidimensional burden** of infections in people with MS



3. Identify factors associated with higher infection burden

Methods

Design	Cross-sectional analysis of a retrospective, participant-reported infection survey
Participants	N = 694 people diagnosed with MS, members of the iConquerMS research network
Measures	• Infection characteristics and consequences • Impact of increased risk of infection on quality of life
Analysis	• Descriptive statistics • Multivariable linear regression to identify factors associated with higher burden • Development of a composite index reflecting burden of infection

Key Takeaways

- 1 Infection burden is multifaceted.**
Impacts extend beyond hospitalization to daily functioning, finances, MS symptoms and management, healthcare use, and participation in usual activities.
- 2 Higher burden among younger individuals, those with recurrent infections, and SPMS.**
These factors were independently associated with greater MIBI scores.
- 3 No independent association with sex or DMT class.**
Findings were consistent after adjusting for DMT class.
- 4 Burden ≠ susceptibility.**
Factors associated with the burden of infection once it occurs may differ from those associated with susceptibility or clinical severity.

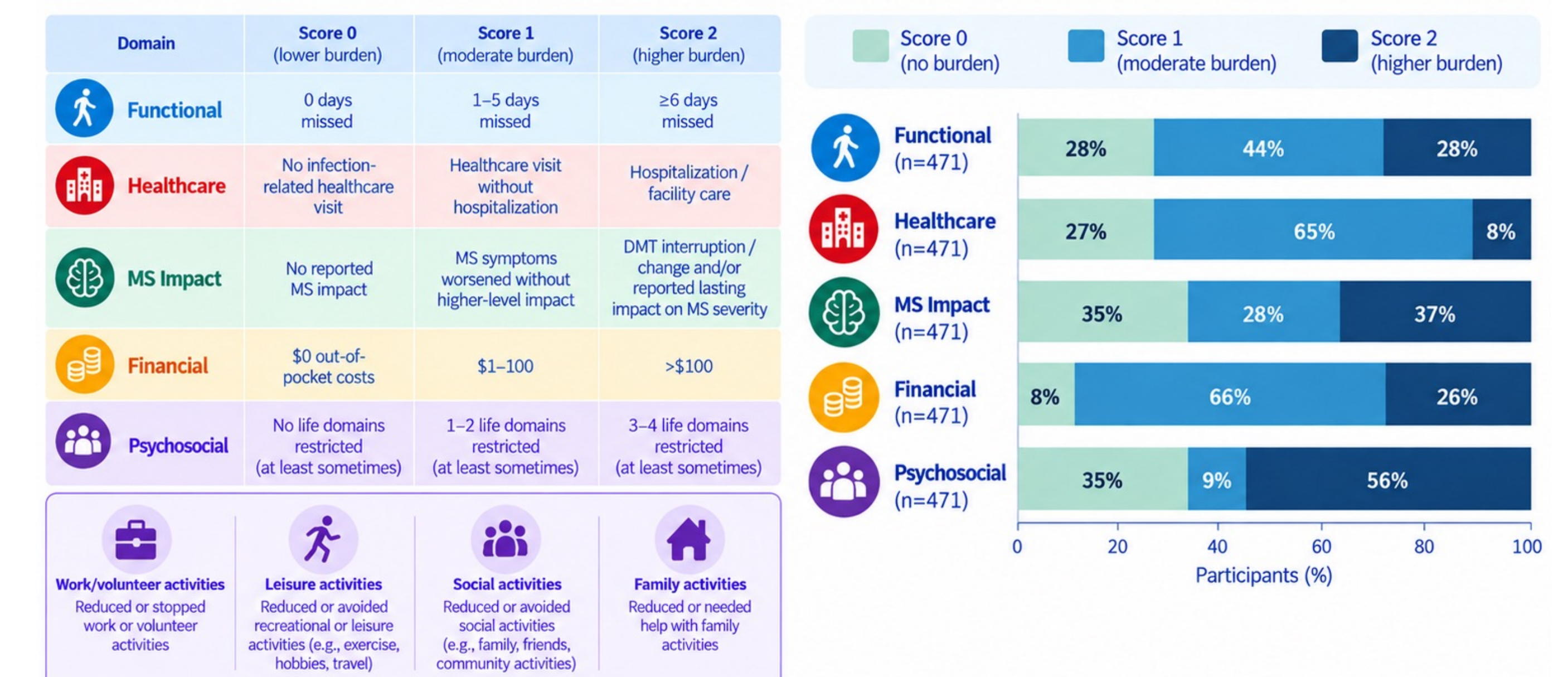
Results

Participant Characteristics N= 694	
Age, mean (SD)	54.8 (11.6)
Sex	
female	532 (77%)
male	162 (23%)
MS phenotype	
RRMS	397 (57%)
SPMS	185 (27%)
PPMS	100 (14%)
Other	12 (2%)
DMT Type	
None	231 (33%)
Anti-CD20	262 (38%)
Fumarate	35 (5%)
Glat. acetate	29 (4%)
Immune Recon.	29 (4%)
Interferon beta	28 (4%)
S1P	28 (4%)
Teriflunomide	20 (3%)
Natalizumab	19 (3%)
Other	13 (2%)

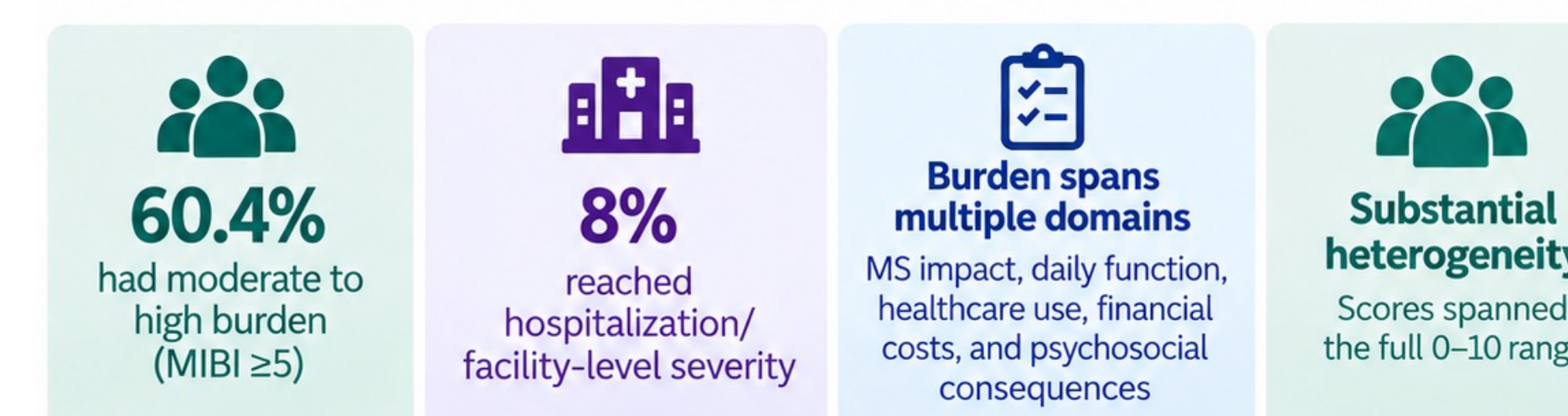
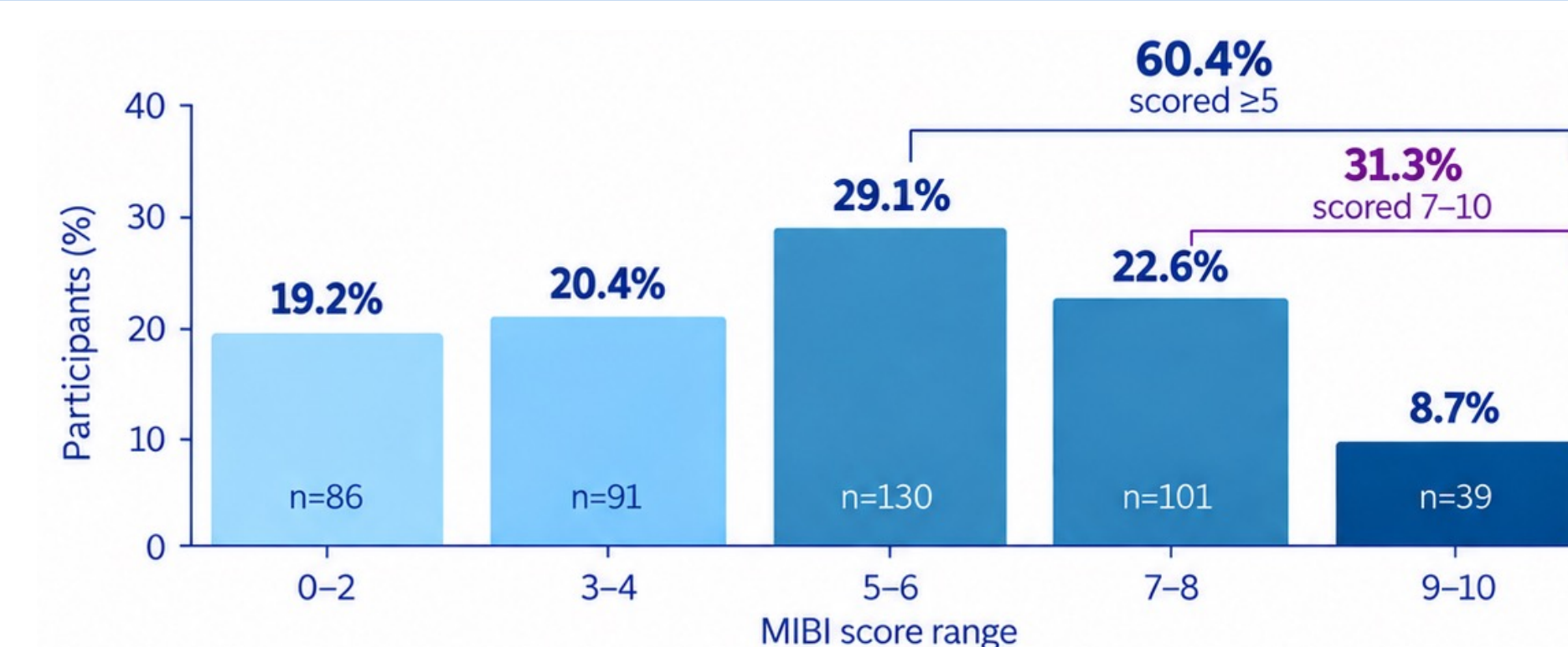
- **68%** of survey respondents reported at least 1 infection in the previous 12 months
 - >50% of those were recurring infections.
- Among participants reporting infection, **59% experienced worsening MS symptoms, 72% sought healthcare, 72% missed ≥1 day of work or school, and 93% incurred out-of-pocket costs.** Despite this substantial impact, only **8% required hospitalization or facility-based care.**
- These findings suggested that infection frequency and medical severity alone do not capture the full patient-experienced burden of infection.

Development of the Multidimensional Infection Burden Index (MIBI)

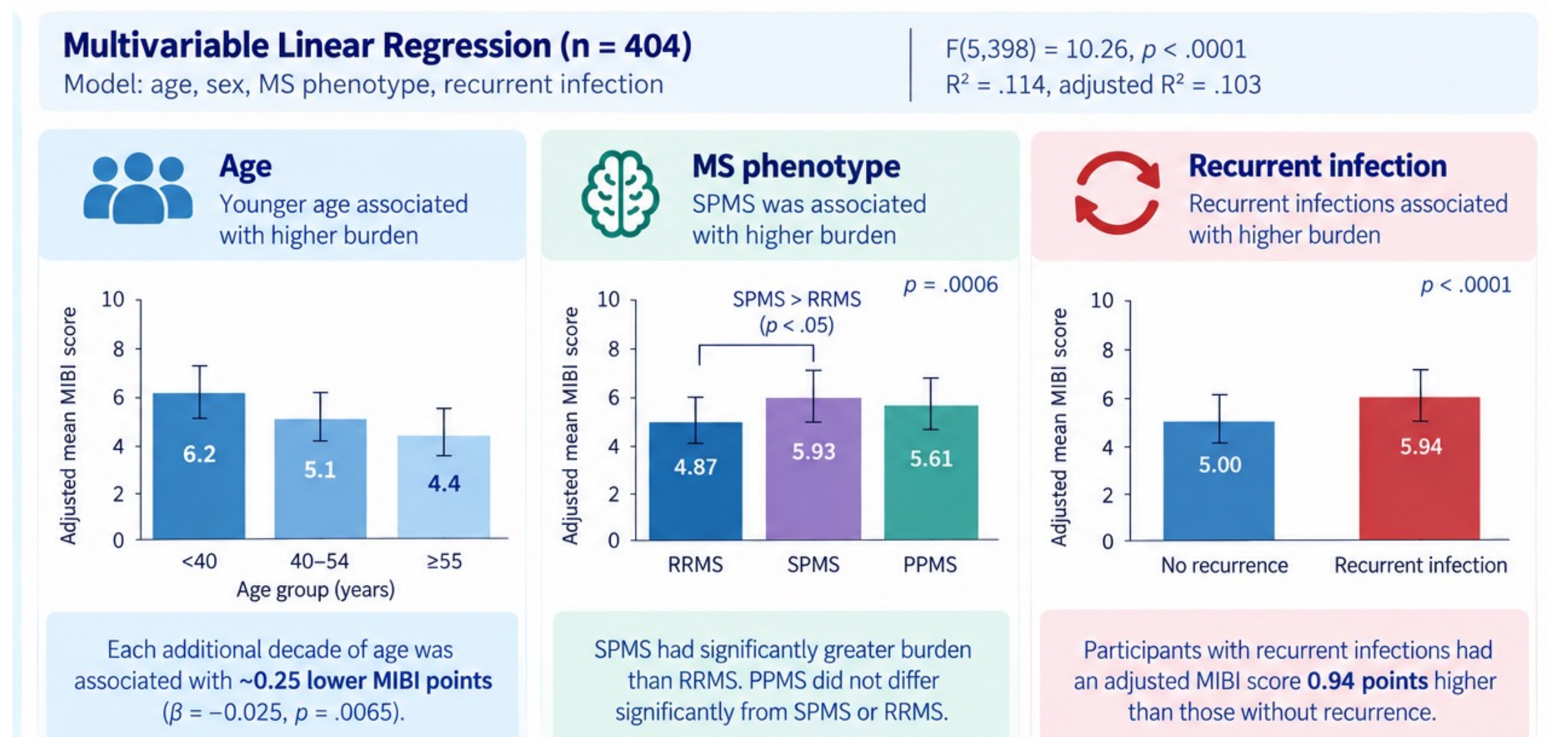
The MIBI was developed to characterize the cumulative impact of infection episodes as well as the impact of living with an increased infection risk. Domains (scored as 0-2 each; total 0-10) include the impact of the most recent infection on function, healthcare usage, MS symptoms and treatment, and finances, plus overall impact of infections on normal activities.



Low hospitalization rates ≠ low infection burden



Factors Associated with Higher Infection Burden



Acknowledgments

Funding for this study was provided by EMD Serono. We thank the iConquerMS members whose survey responses enabled these findings.

Contact Info

Please contact Hollie Schmidt at hollie@acceleratedcure.org for more information.

