(P14) SYMPTOMS THAT PREDICT PARTICIPATION IN PEOPLE WITH MULTIPLE SCLEROSIS
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Background: People with multiple sclerosis (MS) often experience an array of symptoms, the accumulation of which can greatly affect participation in valued activities. Objectives: This study identified symptoms that predict community participation in a sample of 1271 individuals with MS. Methods: Participants completed a 15-item participation scale and rated severity of heat sensitivity, numbness, bowel or bladder problems, imbalance, problems thinking, sexual dysfunction, slurred speech, spasticity, swallowing problems, tremor, vision loss, arm weakness, leg weakness, fatigue, and pain. The sample was partitioned randomly into a training set (n = 847) used for model building and a validation set (n = 424) for cross-validation. A multiple regression model was fit that included 15 symptom severity scores as predictors of participation (adjusted $R^2 = 0.39$). Using backward selection, nonsignificant ($\alpha > .05$) predictor variables were deleted one at a time until only significant predictors remained. Results: The resulting model had an adjusted $R^2$ of 0.37 and included problems thinking, spasticity, vision loss, weakness in the legs, and fatigue. In this regression model, the strongest predictors were weakness in the legs ($P < .001$; standardized $\beta$ coefficient $= -0.29$) and fatigue ($P < .001$; standardized $\beta$ coefficient $= -0.26$). When this model was applied in the validation set, vision loss did not add significantly to variance accounted for by the other four predictors. An adjusted $R^2$ of 0.34 was obtained, suggesting that the model is robust and likely to generalize to other samples. Conclusions: Because causal conclusions cannot be made from correlational data, research is needed to test whether interventions for the symptoms identified (e.g., stimulants to decrease fatigue, exercise programs to increase strength) improve participation. In the meantime, when a goal of treatment is maximizing patient participation in valued activities, clinicians might consider targeting reduction in MS-related symptoms, particularly reducing leg weakness and fatigue.

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