



Patient Perceptions of Mood, Cognition, and Fatigue: Lessons from the Incapacity Status Scale



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Abstract

Objectives: To assess the ability of the mood, cognition, and fatigability items of the Incapacity Status Scale (ISS) to accurately represent these constructs.

Methods: Retrospective chart review of patients who had undergone neuropsychological testing ($N = 68$) was performed at an outpatient multiple sclerosis (MS) clinic in a large medical center. Data collected included the ISS, the Behavior Rating Inventory of Executive Function (BRIEF), three mood inventories, six neuropsychological tests of cognition, and two fatigue inventories. Internal consistency analyses of the ISS and partial Spearman rank-order correlations, controlled for the effects of age, race, and gender, were conducted to examine the relationships among ISS mood, cognition, and fatigability items and external measures of those three constructs.

Results: Two ISS questions were excluded from internal consistency analysis due to high non-response rates: medical problems (86.8%) and sexual function (64.5%). Internal consistency for the ISS was strong (Cronbach's $\alpha = .883$). ISS mood was significantly correlated with the BRIEF and three other inventories. ISS fatigue was significantly correlated with both fatigue inventories. ISS cognition was significantly correlated with only one of six cognitive tests.

Conclusions: The ISS items on mood and fatigability appear to be valid construct measures. The cognition item fails to capture almost all dimensions of cognitive dysfunction in MS. Implications for the development and application of future subjective MS rating instruments are discussed.

Background

The ISS¹ is a well-validated 16-item interview measuring living disability in multiple sclerosis (MS)². However, like many subjective rating scales, it possesses shortcomings in assessing the multiple dimensions of patients' complaints. In particular, subjective measurement items regarding mood, cognition, and fatigue in MS are often limited in their ability to capture the complexity of the features associated with disability in these areas.

Methods and Results

- 68 patients with MS underwent neuropsychological testing at an outpatient MS treatment center, completing objective cognitive function testing and self-report measures.
- Partial Pearson product-moment correlations, adjusted for the effects of gender, age, and race, were calculated between three ISS items ("mood and thought disturbance," "mentation," "fatigability") and matching neuropsychological measures. For "Mentation," scores were also adjusted for the effects of depression, as measured by the Beck Depression Inventory (BDI) on cognitive function.
- Measures: ISS; BRIEF; Hospital Anxiety and Depression Scale (HADS); BDI; Patient Health Questionnaire (PHQ-9); Judgment of Line Orientation (JLO); Brief Visuospatial Memory Test (BVMT-R); Stroop Color and Word Test; Paced Auditory Serial Addition Test (PASAT); Symbol Digit Modalities Test (SDMT); California Verbal Learning Test (CVLT-II); Controlled Oral Word Association Test (FAS, Animals); Fatigue Severity Scale (FSS); Fatigue Scale for Motor and Cognitive Functions (FSMC)

Cognition

	M (SD)	r	p
BRIEF – MI	65.76 (13.13)	.149	.334
BRIEF – GEC	65.31 (13.22)	.104	.501
JLO	21.73 (5.76)	-.046	.739
BVMT-R	36.08 (12.05)	-.120	.333
Stroop	88.36 (25.53)	-.205	.110
PASAT-3 (z)	-1.67 (1.39)	-.367**	.005
PASAT-2 (z)	-1.20 (1.09)	-.319*	.025
SDMT (z)	-1.21 (1.47)	-.177	.168
CVLT-II	43.70 (12.91)	-.223	.068
FAS (z)	-1.13 (1.03)	-.216	.077
Animals (z)	-0.74 (1.20)	-.105	.425

Mood

	M (SD)	r	p
BRIEF – BRI	61.41 (13.00)	.258	.087
BRIEF – GEC	65.31 (13.22)	.300*	.045
PHQ-9	10.20 (6.65)	.301*	.032
HADS – A	8.57 (4.35)	.358**	.009
HADS – D	7.54 (4.69)	.245	.080
BDI-II	17.32 (10.86)	.392**	.001

Fatigue

	M (SD)	r	p
FSS	47.07 (13.45)	.309*	.029
FSMC – Motor	38.48 (9.55)	.366*	.024
FSMC – Cognitive	36.33 (10.26)	.431**	.007
FSMC – Total	74.81 (18.81)	.424**	.008

* $p < .05$, ** $p < .01$

Conclusions

- Mood and fatigue are well-captured by the ISS items, which focus on degree of impairment in functioning.
- The mentation item is a poor representation of the construct of cognition.
- Subjective ratings may more accurately depict cognitive functioning by focusing on specific task demands across cognitive domains, such as memory and processing speed.

References

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