

Bladder-specific dysfunction remained associated with incontinence severity and quality of life after adjustment for overall disability.

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Bladder Dysfunction Rather Than Global Neurological Disability Determines Urinary Incontinence Severity and Quality-of-Life Impairment in Multiple Sclerosis

AIM AND METHODS

**Aim:** Compare how overall neurological disability and bladder-specific dysfunction relate to urinary incontinence severity and incontinence-related quality of life in people with MS.

**Design:** Cross-sectional study of 45 adults with MS; 77.8% were women.

**Clinical measures:** Disease duration, MS subtype, EDSS and FSS-bladder.

**Outcomes:** Incontinence severity (ICIQ-SF) and incontinence-related quality of life (I-QOL).

**Analysis:** Spearman correlations and multivariable linear regression.

UNADJUSTED CORRELATIONS WITH EDSS

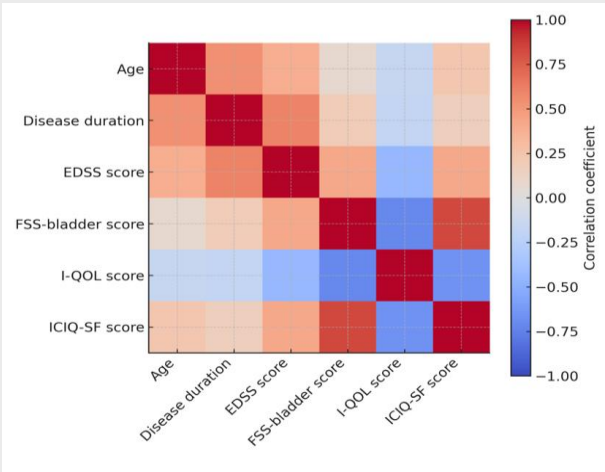
| Measure correlated with EDSS          | Spearman $\rho$ | p value |
|---------------------------------------|-----------------|---------|
| ICIQ-SF: <u>incontinence severity</u> | 0.414           | 0.004   |
| FSS-bladder: bladder dysfunction      | 0.418           | 0.004   |
| I-QOL: quality of life                | -0.441          | 0.002   |

MULTIVARIABLE RESULTS

FSS-bladder remained associated with both outcomes:

- Higher ICIQ-SF score:  $\beta = 5.143$ ; 95% CI 2.014–8.273;  $p < 0.001$
- Lower I-QOL score:  $\beta = -18.022$ ; 95% CI -23.602 to -12.442;  $p < 0.001$

In the multivariable models, FSS-bladder remained associated with both outcomes, whereas overall EDSS did not.



• **Figure 1.** Spearman correlation heatmap; red indicates positive and blue negative correlations.

INTERPRETATION

EDSS correlated with urinary outcomes, but FSS-bladder retained the association in the multivariable models. Assessing overall disability alone may overlook urinary symptom burden.

LIMITATION

Cross-sectional design and a sample of 45 limit causal interpretation and generalisability.

TAKE-HOME MESSAGE

Overall EDSS did not independently reflect urinary symptom burden in this cohort. Bladder-specific assessment may help identify patients whose incontinence and quality-of-life impairment would otherwise be overlooked.