

## Appraisal

## Critically appraised paper: Multidisciplinary inpatient rehabilitation for multiple sclerosis may delay declines in health-related quality of life over 6 months

## Synopsis

Summary of: Boesen F, Nørgaard M, Trénel P, Rasmussen PV, Petersen T, Løvendahl B, Sørensen J. Longer term effectiveness of inpatient multidisciplinary rehabilitation on health-related quality of life in MS patients: a pragmatic randomized controlled trial–The Danish MS Hospitals Rehabilitation Study. *Mult Scler J* 2018;24:340–349.

**Question:** Does inpatient multidisciplinary rehabilitation improve health-related quality of life in patients with multiple sclerosis (MS)? **Design:** Pragmatic, randomised controlled trial with concealed allocation and 6-month follow-up. **Setting:** Two hospitals providing MS-specialised rehabilitation in Denmark. **Participants:** Patients with MS who were referred for 4 weeks of inpatient rehabilitation, aged 18 to 65 years, with an Expanded Disability Status Scale score  $\leq 7.5$ , and familiarity with a personal computer (to complete online questionnaires at 6 months) were eligible for inclusion. Patients diagnosed in the last 6 months or who had experienced a relapse in the last 3 months were excluded. Randomisation of 427 participants allocated 214 to the treatment group and 213 to the control group. **Interventions:** The treatment group received immediate admission (within 2 weeks of randomisation) for multidisciplinary inpatient rehabilitation. Rehabilitation consisted of an average of 3.5 hours (range 1.9 to 6.9) of personalised therapy per day, for 4 weeks (20 days), from a team comprising a neurologist, neuropsychologist, physiotherapist, occupational therapist, dietician, nurse, and social worker, all with specialised knowledge of MS. The control group was assigned to a 6-month waiting list, which was sooner than the usual admission waiting list of 12 months at the time of the study. **Outcome measures:** The primary outcomes were change from baseline at 6 months in MS-specific

health-related quality of life questionnaires: the Functional Assessment of Multiple Sclerosis and the Multiple-Sclerosis Impact Scale-29 (Physical and Psychological). Secondary outcomes were generic health-related quality of life instruments: EQ-5D-5L Index and 15D Index. **Results:** A total of 413 participants ( $n = 209$  treatment,  $n = 204$  control) were included in the intention-to-treat analysis. At 6 months, there were significant between-group differences in favour of the treatment group in the Multiple Sclerosis Impact Scale-29 Psychological component (mean difference  $-2.7$  points, 95% CI  $-5.6$  to  $-0.1$ ) and the 15D Index (mean difference 0.017 points, 95% CI 0.005 to 0.030). No other between-group differences were significant. Post-hoc analysis showed that a larger proportion of patients in the treatment group at 6 months were unchanged or improved from baseline in the Functional Assessment of Multiple Sclerosis, Multiple-Sclerosis Impact Scale-29 Psychological and the 15D Index. **Conclusion:** Four weeks of specialised, multidisciplinary inpatient rehabilitation had small and inconsistent effects on parameters of health-related quality of life in people with MS at 6 months. This study provides some evidence that inpatient rehabilitation may reduce declines in health-related quality of life over 6 months.

**Provenance:** Invited. Not peer reviewed.

**Prudence Plummer**

Division of Physical Therapy, University of North Carolina at Chapel Hill, USA

<https://doi.org/10.1016/j.jphys.2018.08.011>

1836-9553/© 2018 Australian Physiotherapy Association. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Commentary

Systematic reviews provide moderate evidence of the effectiveness of inpatient rehabilitation for improving activities and participation in patients with multiple sclerosis (MS).<sup>1</sup> This large-scale study adds to the evidence base by evaluating longer-term (6-month) impacts on quality of life.

Whilst quality of life appeared to 'substantially' improve on all measures at discharge within the treatment group, improvements were generally not maintained at 6 months. Although this should be viewed within the context of a progressive disease, it does raise some questions. Was enough emphasis placed on self-management for patients to transfer strategies into their daily life? Could 'booster sessions' or home-based rehabilitation after discharge help sustain treatment benefits? These questions remain unanswered.

Clinical care of MS differs within and between countries.<sup>2</sup> This study was undertaken in Denmark, where specialist MS inpatient rehabilitation is routinely offered. This is not so for many countries.<sup>3</sup> Comprehensive description of the intervention and its context is therefore essential to reliably implement interventions shown to be useful, and replicate or build on research findings. This is challenging when describing multidisciplinary treatment packages. Together, the article and supplementary material provide a detailed description of the personalised intervention, in terms of organisational aspects (staff experience, training) and content (frequency, duration, intensity). These intervention components should be considered when translating findings to clinical practice.

A significant between-group difference favouring intervention was observed in two (of six) quality of life measures, but the 2.7-point improvement on the MSIS-29 (psychological) fell below the minimum clinically important difference of 4 to 6 points,<sup>4</sup> suggesting that the change may not be clinically meaningful. Understanding the characteristics of those who improved by at least the minimum clinically important difference may help to identify patients most likely to benefit, which is important for optimising the use of finite healthcare resources.

**Provenance:** Invited. Not peer reviewed.

**Jennifer Freeman**

School of Allied Health Professions, University of Plymouth, UK

<https://doi.org/10.1016/j.jphys.2018.08.012>

## References

1. Khan F, et al. *Arch Phys Med Rehabil*. 2017;98:353–367.
2. Martinková P, et al. *Mult Scler Rel Disord*. 2018;22:59–67.
3. Browne P, et al. *Neurology*. 2014;83:1022–1024.
4. American Physical Therapy Association, MS Outcome Measures Taskforce; 2012. <http://neuropt.org/docs/ms-edge-documents/final-ms-edge-document.pdf?sfvrsn=4>.