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Title

How is spinal cord function measured in degenerative cervical myelopathy? A systematic review

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The data associated with this publication are not available for this reason: N/A

Introduction

The most common cause of spinal cord dysfunction is degenerative cervical myelopathy. It manifests as spinal cord compression and neurological impairment. Since the spinal cord is complex and works with many organs, it is challenging to measure spinal cord function in patients with DCM. mJOA is widely used to assess DCM but is problematic due to comorbidities and interobserver bias.

Objectives

To analyze existing literature and determine what neurological, functional, or quality of life measures have been used to quantify DCM impairment, to identify research trends, practice patterns, and gaps in our knowledge

Methods

Study Design

- Prospective collection of data
- ≥ 100 patients with a diagnosis of DCM
- Original research studies including RCTs, cohort studies, case series, and case-control studies
- English language
- Measured at least 1 quantitative outcome measure

How is spinal cord function measured in degenerative cervical myelopathy? A systematic review

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Results:

Of all outcome measures, 92% (320/349) were questionnaires, whereas objective physical testing of neurological function (strength, gait, balance, dexterity, or sensation) made up 8% (29/349). The most used instruments were subjective functional scales shown in figure 1.

Studies used an average of 2.36 outcome measures, while 58 studies (39%) used only a single outcome measure (figure 2). In the past 5 years, the average number of neurological outcome measures used has increased from 0.06 to 0.31. There has also been increased use of upper extremity motor and lower extremity motor testing.

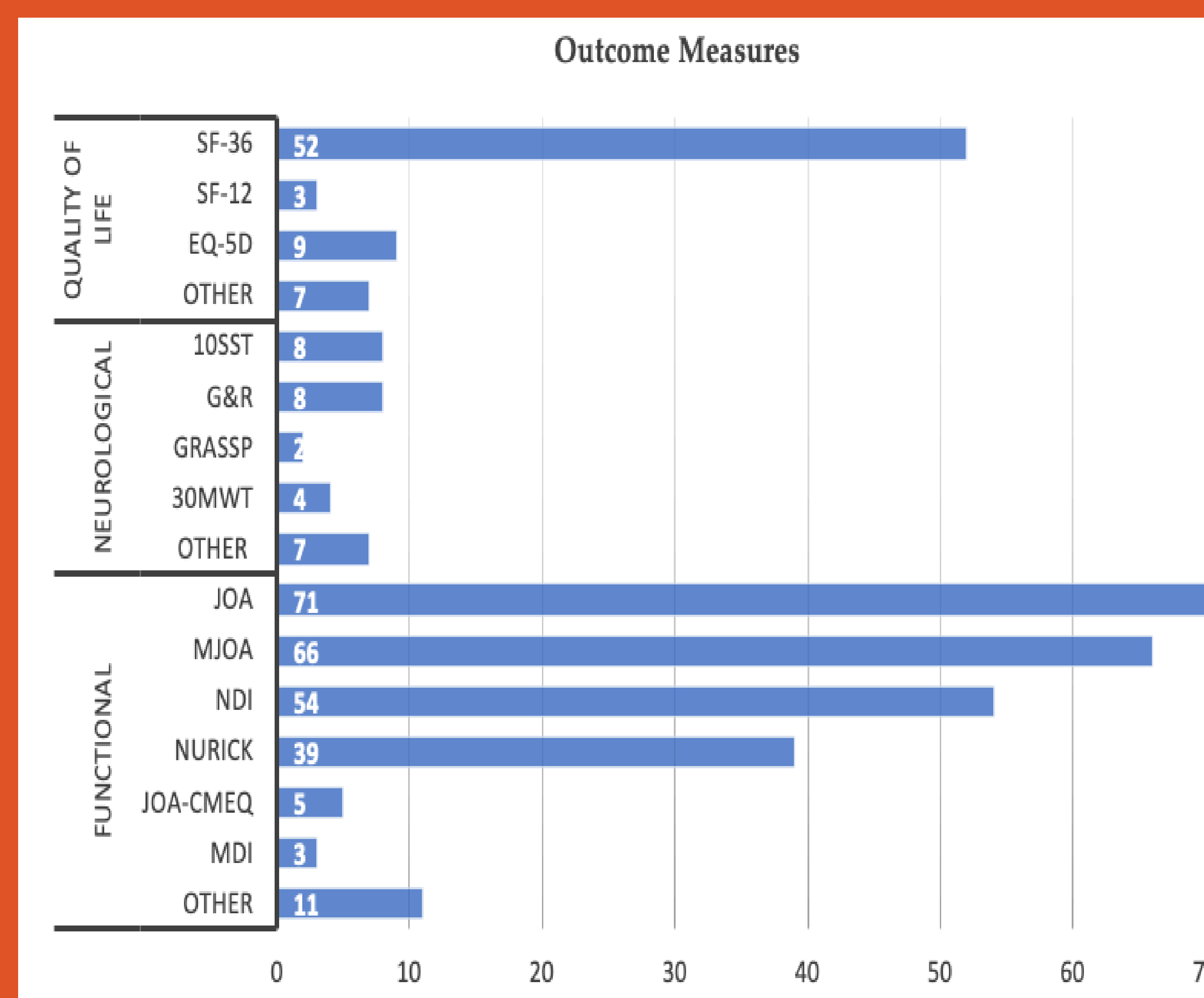


Figure 1

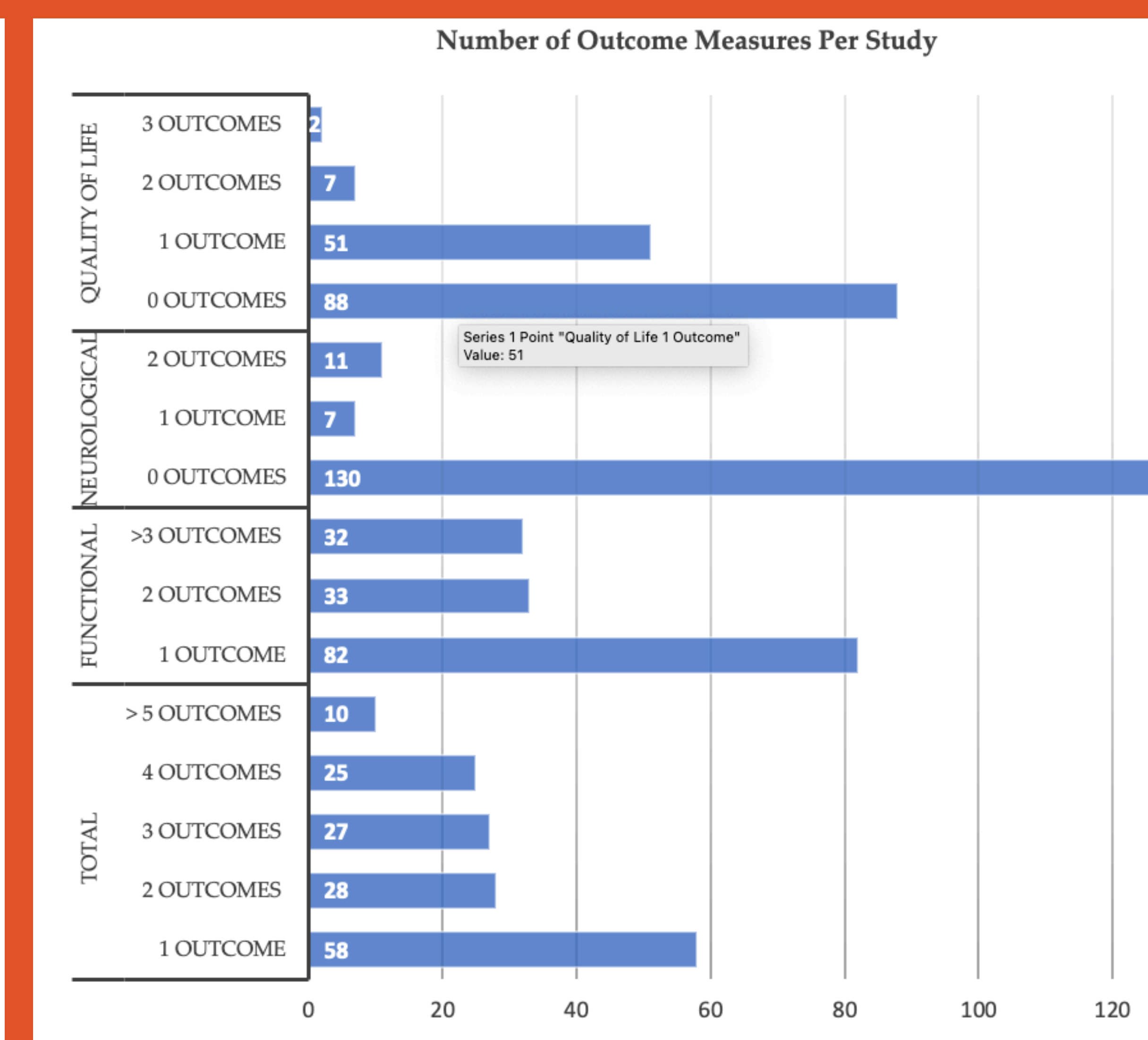


Figure 2

Discussion

Recommend the use of multiple subjective and objective measures for future studies, clinical management, and CPGs

Novel outcome measures should be developed and validated that incorporate subjective and objective information and encompass numerous function of spinal cord

A concerted effort is needed to augment existing methods and develop new tools for quantifying disease in DCM, for the purpose of improving diagnosis, measuring severity, and monitoring patients for deterioration

Limitations

- (1) This review focused only on quantitative outcome measures
- (2) We excluded retrospective and smaller prospective studies
- (3) This study required the English language