

The Functional Rating Index

Description

The Functional Rating Index (FRI) (Feise and Michael Menke 2001) is a 10-item region-specific Patient Reported Outcome (PRO) measure developed by combining the Neck Disability Index (NDI) and Oswestry Disability Index (ODI). It is designed to reflect status for disorders that involve several or any spine area as a single kinetic chain. The 10 FRI items fall within four constructs – pain, sleep, work, and daily activity – that fit within the three domains of WHO-ICF: 1) *Activity limitations* daily activity with six items – personal care, travel, recreation, lifting, walking and standing; 2) *Impairment* with three items and two constructs of pain and sleep – pain frequency, pain intensity and sleep; and 3) *Participation restriction* with one construct and item – work. It has an approximate completion time of 1 minute and scoring at 20 seconds (Feise and Michael Menke 2001), however percentage conversion may require a computational aid, particularly with missing responses. Being copyright, either permission or a royalty payment is required for its use.

Instructions and scoring: The FRI is for ‘back and neck use only’ and patients must circle the number most closely describing their condition ‘right now’ on how they ‘manage everyday activities’. It uses descriptive anchors within a

5-point Likert scale ranging from 0 (Perfect / No pain / Can do) to 4 (Totally disturbed / Severe or Constant pain / Increased pain with any ‘activity’ / Cannot do). This provides a 40 FRI point raw score maximum that allows one missing response to be compensated for by the addition of the remaining item averages.

Psychometric properties: The test-retest reliability varies widely in general low back pain populations (ICCs: 0.63 to 0.99) (Feise and Michael Menke 2001, Childs and Piva 2005) with a similar range in patients with neck pain (Gabel 2004, Stewart et al 2007). Criterion validity ranges from $r = 0.67$ with the ODI (Childs and Piva 2005) and 0.66 with the Roland Morris Questionnaire (Bayar et al 2004). In the cervical region levels exceed 0.75 compared to the NDI and patient specific measures (Gabel 2004, Stewart et al 2007). Internal consistency alpha ranges from 0.88 (Gabel et al 2004) to 0.92 (Feise and Michael Menke 2001). These properties result in high levels of responsiveness as measured by effect sizes from 0.93 to 1.24. By contrast, error scores are weaker than most recognised spine PROs with the minimal detectable change ranging from 16% to 23% (Gabel 2004, Stewart et al 2007).

Commentary

The Functional Rating Index is one of four PROs that conceptualise the spine functioning as a single kinetic unit. Most other spine PROs are distinctly divided into back/low back and neck (Grotle et al 2005). Unfortunately the FRI development procedure and methodology is subjective and arbitrary (Feise and Michael Menke 2001). There is no item construct development or reduction methodology from the initial pool of 15 items. A final item ‘pain frequency’ is introduced without clarification. This simple method of existing tool item combination has no procedural basis for PRO development. Similarly, items are criticised as inadequately reflecting the WHO-ICF three domains, and not distinguishing between ‘remunerated’ or ‘at home’ work. Furthermore, no independent validation or analysis of factor structure has been made (Grotle et al 2005).

The FRI is effectively the ODI with two substituted items and a more practical format incorporating visual and descriptive response options. The ‘immediate’ reference time frame for patient status has been criticised as an erroneous impression can occur since spine symptoms fluctuate on a daily basis; ‘today’ or ‘recent days’ is a more commonly accepted period (Grotle et al 2005). These authors describe the FRI as ‘inadequate’ and not recommended. Rebeck et al (2006) and Stewart et al (2007) have found the FRI

less responsive than patient-specific measures, comparable to other spine-specific PROs and preferable to generic or summary measures such as the SF-36 Physical.

Physiotherapists using the FRI will find practicality its greatest attribute. Physiotherapists must however be aware of the drawbacks: the score is immediate and may not reflect average daily status; a bias towards low back pain; inadequate structure and item width; and minimal comparative published research in combined spine and multi-site spine patients.

Philip Gabel

University of the Sunshine Coast, Australia

References

- Bayar B et al (2004) *Aging Clin Exp Res* 16: 49–52.
- Childs J (2005) *Eur Spine J* 14: 1008–1012.
- Feise R and Michael Menke J (2001) *Spine* 26: 78–86.
- Gabel P (2004) *Aust J Physiother* 50: S18.
- Grotle M et al (2005). *Spine* 30: 130–140.
- Rebeck T et al (2006) *Inj Prev* 12: 93–98.
- Stewart M et al (2007) *Spine* 32: 580–585.