

Interrater Reliability and Responsiveness of the ICU Patient-Reported Functional Scale

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Abstract

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Introduction/Hypothesis:

While many performance-based functional measures exist for use in the intensive care unit (ICU), to our knowledge, there are none assessing patients' perceptions of function. We developed the ICU Patient-Reported Functional Scale (PRFS) for use in patients with critical illness. This instrument measures patients' perceptions of their ability to perform 6 activities (rolling, sitting edge of bed, sit-to-stand and bed-to-chair transfers, ambulation, stair climbing). Each item is assessed on an 11-point scale (0-unable, 10-able to perform pre-ICU) to a maximum score of 60. We assessed the inter-rater reliability and responsiveness of the ICU PRFS.

Methods:

Nested within TryCYCLE, a single-centre, prospective, observational cohort of the safety and feasibility of early in-bed cycling with mechanically ventilated patients (NCT01885442), we measured outcomes at 3 time points: ICU awakening and ICU and hospital discharge (d/c). Two raters, blinded to each other's assessments administered the ICU PRFS within 24-hours of each other. We calculated the intra-class correlation coefficient (ICC) (95% confidence interval (CI)), the standard error of measurement (SEM) (95% CI) and the minimal detectable change (90% confidence (MDC90)). We considered reliability scores of 0.0-0.60 as 'poor-moderate', 0.61-0.80 'substantial', and 0.81-1.0 'almost perfect'. Analyses were conducted with Stata v.14.

Results:

Of 33 enrolled patients, 17 were assessed by 2 raters for at least 1 time point; the earliest 2-rater assessment was included in analysis. We excluded 1 patient due to a true change in the reassessment interval. Of 16 paired assessments, 6, 4, and 6 occurred at ICU awakening and ICU and hospital d/c, respectively. The ICC was 0.91(0.76,0.97), SEM was 4.75(7.35,3.51) and MDC90 was 11.04 points.

Conclusions:

The ICU PRFS has excellent inter-rater reliability. If a patient's score changes by 11 points between assessments, clinicians and researchers can be confident that a true change has occurred. The ICU PRFS can be used to assess and monitor patients' perceptions of function over time.

General Classification:

Clinical Research

Patient Type:

Adult

Category:

Patient and Family Support

Category Alternate 1 (optional):

Quality and Safety

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outcomes research

quality and patient safety

rehabilitation medicine

scoring systems