Validity of the Patient-Reported Functional Scale - Intensive Care Unit (PRFS-ICU)

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Rationale: There are few physical function measures specifically developed for survivors of critical illness, and to our knowledge, none assessing patients' perceptions of their own function. We developed the Patient-Reported Functional Scale for ICU (PRFS-ICU), which measures patients' perceptions of their ability to perform 6 activities (rolling, sitting edge of bed, sit-to-stand, bed-to-chair transfers, ambulation, stair climbing). Each item is scored from 0 (unable) to 10 (able to perform at pre-ICU level), to a maximum of 60. We previously established PRFS-ICU inter-rater reliability (intraclass correlation coefficient (95% confidence interval (CI)) 0.91(0.76,0.97), standard error of measurement (95%CI) 4.75(3.51,7.35)), and determined the minimal detectable change score (90% confidence) was 11.04 points (Critical Care Medicine 2016;44(12):284. doi:10.1097/01.ccm.0000509507.80099.6e). The objective of this study was to estimate the convergent validity of this novel patient-reported measure. Methods: In a single-centre, prospective cohort study examining the safety and feasibility of early in-bed cycling with mechanically ventilated patients (TryCYCLE, NCT01885442), we measured outcomes at 3 time points: ICU awakening, ICU discharge, and hospital discharge. Using Pearson's correlation coefficient (r, 95%CI), we estimated the convergent validity by correlating the PRFS-ICU with 4 other functional measures: Functional Status Score for ICU (FSS-ICU), Physical Function Test for ICU (PFIT-s), Medical Research Council Sum Score (MRC-SS), and Katz Index of Independence in Activities of Daily Living (Katz ADLs). We conducted a pooled index analysis by transforming the scores of each measure to a common scale to produce a sum score; we then correlated the PRFS-ICU with this pooled index. We identified all patients with a PRFS-ICU score and at least 1 of these 4 functional measures completed within 3 days of the PRFS-ICU at any time point (we chose 3 days because significant changes in strength or function are unlikely). Results: Of 33 patients enrolled in TryCYCLE, 19 had at least 1 completed functional measure for the correlation analysis. Correlations of the PRFS-ICU with the 4 functional measures were (r, 95%CI): FSS-ICU (0.40(-0.14,0.76)), PFIT-s (0.43(-0.13,0.78)), MRC-SS (0.51(0.02,0.80)), Katz ADLs (0.53(0.10,0.79)), and pooled index (0.48(-0.14,0.82)). Conclusions: The Patient-Reported Functional Scale-ICU is reliable and moderately correlates with MRC-SS and Katz ADLs. This pilot work suggests the PRFS-ICU may be useful to assess, monitor, and better understand patients' perceptions of function over time. Future studies eliciting patient perceptions and evaluating their relationship to actual recovery trajectories using other outcome measures could

further advance the critical care rehabilitation field.