Reliability of Proxy and Self-Assessed Pre-Injury Functional Status in Orthopaedic Trauma: A Prospective Observational Study

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Purpose: Patient-Reported Outcomes Measurement Information System (PROMIS) is a tool that aids providers in quantifying the patient's perspective on their health status and recovery. Within the orthopaedic trauma community, the patient's first interactions with providers occur post-injury, which precludes obtaining a functional status baseline score pre-injury. Our study seeks to determine the reliability of obtaining pre-injury baseline functional status by comparing patient retrospective baseline PROMIS scores at different time points post-injury, and with a familiar proxy.

Methods: Eligible patients with acute fractures were identified from an orthopaedic rrauma service over an 8-month period. Proxies were first-degree relatives, significant others, or spouses. The PROMIS surveys were administered on tablets. Patients and their proxies completed week-0 baseline PROMIS scores within 7 days of injury. Patients completed week-2, 6 retrospective baseline PROMIS scores, during outpatient visits or via remote mechanism. Patient-specific means with 95% confidence intervals were estimated from a linear mixed-effects model and Intraclass correlation coefficients (ICCs) were calculated.

Results: A total of 173 patients were included, of whom 60% had lower extremity (LE) injuries only (n = 104), 26% (n = 45) had upper extremity (UE) injuries, and 14% (n = 24) had both. The mean age was 52 ± 21 years, 58% were male (n = 101), the majority of cases were operative (n = 131, 76%), and the most common mechanism of injury was ground level fall (n = 54, 31%). Little variation in the distribution of both lower and upper extremity PROMIS scores was observed over time. The average differences over time were small overall, with differences (mean ± standard deviation) observed from week 0 to week 2 of 0.6 ± 3.2 for those with LE injuries and 0.3 ± 1.9 for those with UE injuries. Patients at week 0 were similar to proxies on both lower (difference: 0.2 ± 3.6) and upper (0.0 ± 2.7) extremity scores. None of the comparisons were significantly different from zero (P>0.05). Agreement over the 3 time points was high for both the LE PROMIS (ICC = 0.94) and UE PROMIS (ICC = 0.96).

Conclusion: These data demonstrate little variation and high agreement in patient-proxy PROMIS scores and self-assessed PROMIS over time. These findings suggest that pre-injury functional status can be obtained via self-assessment up to 6 weeks post-injury, and via use of a proxy, in a general orthopaedic trauma population.