Poster Id: 42123: Correlation between PROMIS instruments with Neck disability index (NDI) and Oswestry Disability Index (ODI) following spine surgery.

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Disclosure:

No disclosures related to the study.
Introduction:

Patient reported outcome measurement information system (PROMIS) is a validated state-of-the-art psychometric test, which has shown to be useful in patients with spine disorders. The aim of our study was to evaluate the change in PROMIS-short form (SF) scores at baseline, 3 months and 12 months post procedure and to correlate these with standard scores.
Methods:

Data was prospectively collected from our IRB approved database, 2014-2017. We analyzed patients in 3 cohorts: lumbar, cervical and the pooled cohort. Outcome variables were PROMIS items of pain interference, emotional distress and physical function, EuroQol five dimensions (EQ-5D), Visual analogue scale (EQ VAS), Oswestry/Neck Disability Index (ODI/ND), back, leg/neck and arm pain scales and Patient Satisfaction Index (PSI) using telephone questionnaire.
Results:

Patients with lumbar and cervical pathologies constituted 62% (n=51) and 37.8% (n=31) of patients respectively. There was a significant change in median PROMIS pain interference (65.5 to 56.6), Emotional distress anxiety (56.3 to 48.4), Emotional distress depression (51.2 to 37.1) and physical function (37.2 to 42.6) at baseline and 3 months follow-up respectively, p<0.05. Similarly, change in these scores from baseline to 12 months was significant (n=41, p<0.05). Compared to changes in median NDI and ODI from baseline to 12 months (23.0-9.0,
p=0.0024 and 20.0-10.0, p<0.0001), change in median PROMIS physical function score was 38.7 to 46.4 (p=0.0054) and 37.2 to 42.6 (p<0.0001) respectively. There was correlation between PROMIS pain interference and NDI, neck, back pain, leg pain scores at 3 months follow-up (p<0.05). PROMIS pain and physical function showed moderate responsiveness to baseline- 3-month changes at both cervical and lumbar levels.
Figure 1: Linear regression plots illustrating the Pearson correlation between PROMIS pain Legacy neck and arm pain.
Figure 2: Responsiveness between PROMIS and legacy measures. Value are standardized response mean (SRM) with associated 95% CI.

The responsiveness is classified based on Cohen’s classification of effect size: small (0.2-0.5), moderate (0.5-0.8) and large (>0.8). Two items have comparative responsiveness if their 95% CI overlap.
**Discussion:**

Our results showed that there was significant correlation between PROMIS pain interference/physical function and all the legacy measures at 3 months follow-up. PROMIS anxiety and physical function showed moderate responsiveness at both cervical and lumbar levels, whereas PROMIS pain domain showed large responsiveness only at lumbar level. Emotional distress anxiety, Emotional distress depression and physical function at 3 months follow-up compared to baseline. Similarly, change in these scores from baseline to 12 months was significant.
Conclusion:

PROMIS-SF items detect significant changes in scores across all domains at 3 and 12 months following the procedure. PROMIS-SF is responsive to change after lumbar and cervical spine surgery and can be used to assess longitudinal outcomes in these patients. Patients’ undergoing spine surgery improved in their PROs from baseline to 3 months after surgery in general and the gain was maintained at 12 months. Future studies, with large US populations and longer follow-up validation, are needed to confirm and strengthen these findings.