As the focus in spine surgery has shifted from radiographic to patient-centric outcomes, patient reported outcomes measures (PROMs) are becoming increasingly important. They are linked to patient satisfaction, and are used to assess healthcare expenditure, determine compensation and evaluate cost effectiveness. Thus, PROMs are important to various stakeholders, including patients, physicians, payers and healthcare institutions. Thus, it is vital to establish methods to interpret and evaluate these outcome measures.

To evaluate the correlation between Neck Disability Index (NDI), Patient Reported Outcome Measurement Information System Physical Function (PROMIS-PF) and Short Form-12 Physical Health Score (SF-12 PHS) in cervical spinal surgery in order to determine the validity of PROMIS-PF in these patients.

Retrospective review of prospectively collected data PATIENT SAMPLE: Consecutive patients who underwent cervical surgery for degenerative spinal pathology with a minimum of 3 months follow-up OUTCOME MEASURES: Self-reported measures i.e. PROMs, including NDI, PROMIS-PF and SF-12 PHS METHODS: No funding was received for this study. The authors report no relevant conflict of interest. PROM collected pre-operatively and at each follow-up were analyzed using Pearson product-moment correlation.

Of the 121 patients included, 66 underwent ACDF, 42 cervical disc replacement, 13 posterior cervical decompression with or without fusion. A statistically significant improvement was achieved in all PROMs by 6 weeks and maintained at 1 year. Furthermore, the percentage of patients achieving an improvement greater than MCID was similar for NDI and PROMIS-PF, particularly at a follow-up of 3 months or more. A statistically significant negative correlation was seen between NDI and PROMIS-PF, which was moderate pre-operatively and in the early post-operative period (r= - 0.565 to -0.600), and strong at 3 months or longer follow-up (r=-0.622 to -0.705). A statistically significant, negative correlation was also seen between SF-12 PHS and NDI, which was moderate pre-operatively and at 6 weeks (r=-0.5551 to -0.566); and strong at all other time-points (r=-0.678 to -0.749). There was a statistically significant positive correlation between SF-12 PHS and PROMIS-PF, which was strong to very-strong at all time-points (r=0.644 to 0.822), except at 2 weeks (r=0.570).

While NDI and SF-12 have been used for several years, PROMIS is a new outcome measure that is increasingly being implemented. The results of this study demonstrate the convergent and discriminant validity of PROMIS-PF, supported by the strong correlation between SF-12 PHS and PROMIS-PF at all time-points and the moderate correlation between NDI and PROMIS-PF pre-operatively and in the early post-operative period, respectively. Thus, while PROMIS-PF may not be a good surrogate for disease-specific outcome measures, it may extend value as a precise and efficient general health tool [1)].

1)
Vaishnav AS, Gang CH, Iyer S, McAnany S, Albert T, Qureshi SA. Correlation between NDI, PROMIS and SF-12 in Cervical Spine Surgery. Spine J. 2019 Oct 31. pii: S1529-9430(19)31063-0. doi: 10.1016/j.spinee.2019.10.017. [Epub ahead of print] PubMed PMID: 31678044.