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Patient-Reported Outcomes Measurement Information System (PROMIS)

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 spine 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⁾.

The Oswestry Disability Index (ODI) is one of the most commonly used patient-reported outcome instruments, but completion of this 10-question survey can be cumbersome. Tools from the Patient-Reported Outcomes Measurement Information System (PROMIS) are an alternative, and potentially more efficient, means of assessing physical, mental, and social outcomes in spine surgery.

Yee et al. of a retrospective study assessed whether scores on the 4-item surveys of function and pain from the PROMIS initiative correlate with those on the ODI in lumbar spine surgery.

Patients evaluated in the adult neurosurgery spine clinic at a single institution completed the ODI, PROMIS Short Form v2.0 Physical Function 4a (PROMIS PF), and PROMIS Short Form v1.0 Pain Interference 4a (PROMIS PI) at various time points in their care. Score data were retrospectively analyzed using linear regressions with calculation of the Pearson correlation coefficient.

Three hundred forty-three sets of surveys (ODI, PROMIS PF, and PROMIS PI) were obtained from patients across initial visits (n = 147), 3-month follow-ups (n = 107), 12-month follow-ups (n = 52), and 24-month follow-ups (n = 37). ODI scores strongly correlated with PROMIS PF t-scores at baseline (r = -0.72, p < 0.0001), 3 months (r = -0.79, p < 0.0001), 12 months (r = -0.85, p < 0.0001), and 24 months (r = -0.89, p < 0.0001). ODI scores also correlated strongly with PROMIS PI t-scores at baseline (r = 0.71, p < 0.0001), at 3 months (r = 0.82, p < 0.0001), at 12 months (r = 0.86, p < 0.0001), and at 24 months (r = 0.88, p < 0.0001). Changes in ODI scores moderately correlated with changes in PROMIS PF t-scores (r = -0.68, p = 0.0003) and changes in PROMIS PI t-scores (r = 0.57, p = 0.0047) at 3 months postoperatively.

A strong correlation was found between the ODI and the 4-item PROMIS PF/PI at isolated time points for patients undergoing lumbar spine surgery. Large cohort studies are needed to determine longitudinal accuracy and precision and to assess possible benefits of time savings and improved rates of survey completion ²⁾.

	Without any difficulty	With a little difficulty	With some difficulty	With much difficulty	Unable to do
Are you able to do chores such as vacuuming or yard work?	5	4	3	2	1
Are you able to go up and down stairs at a normal pace?	5			2	
Are you able to go for a walk of at least					
15 minutes?	5	4	3	2	
Are you able to run errands and shop?	5	4	3	2	1

In the past 7 days	Not at all	A little bit	Somewhat	Quite a bit	Very much
How much did pain interfere with your day to day activities?			3	4	5
How much did pain interfere with work around the home?		2	3	4	5
How much did pain interfere with your ability to participate in social activities?			□ 3	4	5
How much did pain interfere with your household chores?		2	3	4	5

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	Please respond to each item by marking one box per row	Excellent	Very good	Good	Fair	Poor
Global 01	In general, would you say your health is:	5	4	3	2	1
Global 02	In general, would you say your quality of life is:	5	4	3	2	1
Global 03	In general, how would you rate your physical health?	5	4	3	2	□ 1
Global 04	In general, how would you rate your mental health, including your mood and your ability to think?	□ 5	□ 4	□ 3	□ 2	□ 1
Global 05	In general, how would you rate your satisfaction with your social activities and relationships?	5	4	3	2	□ 1
Global 09	In general, please rate how well you carry out your usual social activities and roles. (This includes activities at home, at work and in your community, and responsibilities as a parent, child, spouse, employee, friend, etc.)	□ 5	□ 4	□ 3	2	□ 1
			1		32	
		Completely	Mostly	Moderately	A Little	Not At All
Global 06	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	Completely	Mostly	Moderately	A Little	Not At All
Global 06	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	Completely	Mostly	Moderately	A Little	Not At All
Global 06	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	Completely	Mostly	Moderately 3 Sometimes	A Little 2 Often	Not At All 1 Always
Global 06 Global 10	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair? In the past 7 days How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	Completely	Mostly 4 Rarely 4	Moderately 3 Sometimes 3	A Little 2 Often 2	Not At All 1 Always
Global 06 Global 10	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair? In the past 7 days How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	Completely Completely S Never S None	Mostly A Rarely 4 Mild	Moderately 3 Sometimes 3 Moderate	A Little 2 Often 2 Severe	Not At All 1 Always 1 Very Severe
Global 06 Global 10 Global 08	To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair? In the past 7 days How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable? How would you rate your fatigue on average?	Completely Completely S Never S None S S	Mostly A Rarely A Mild 4	Moderately 3 Sometimes 3 Moderate 3	A Little 2 Often 2 Severe	Not At All 1 Always Always 1 Very Severe

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Scoring:

Re-code Global07. The recoded score ranges from 1 to 5.

(0 No pain =5; 1, 2, or 3 =4; 4, 5, or 6 =3; 7, 8, or 9 =2; 10 worst pain imaginable =1)

After recoding, the Global Physical Health score = SUM responses to G03 + G06 + G07 + G08. Global Mental Health score = SUM G02 + G04 + G05 + Global10.

TOTALS	Raw Score	T-Score
Global Physical Health		
Global Mental Health		

Free Online PROMIS 10 Score Calculator

https://orthotoolkit.com/promis-10/

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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.

Yee TJ, Smith BW, Joseph JR, Saadeh YS, Nathan JK, Kahn EN, Khalsa SS, Fearer KJ, Kirsch MJ, Nerenz

DR, Chang V, Schwalb JM, Abdulhak MM, Park P. Correlation between the Oswestry Disability Index and the 4-item short forms for physical function and pain interference from PROMIS. J Neurosurg Spine. 2019 Aug 9:1-6. doi: 10.3171/2019.5.SPINE19400. [Epub ahead of print] PubMed PMID: 31398700.

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