

PROMIS Physical Function and Pain Correlation with ODI and VAS in the Surgical Patient Population with Lumbar Stenosis and Claudication

- Washington University in St Louis
Department of Orthopedic Surgery
- Robert Owen MD, Lukas Zebala MD, Steven
McAnany MD

Background

- **Legacy outcome measures** are essential for analyzing treatments for lumbar stenosis with claudication
 - Examples: **ODI** (Oswestry Disability Index) **VAS pain**
- **Administrative burdens** impose limits on completion of legacy measures
- Concerns exist over the reliability and precision with which legacy assessments capture primary outcomes of interest, and the ability to compare outcomes across disparate populations

Background

- The **PROMIS** group developed a patient outcome measure system to improve reporting of patient symptoms, function, and health and to reduce administrative burden
 - Early success seen with use in orthopedics
 - ODI and VAS scores have not been compared with PROMIS in patients with lumbar stenosis and claudication undergoing surgery
- **Purpose:** Compare ODI and VAS pain with PROMIS physical function and pain interference scores to determine their correlations in a surgical lumbar stenosis patient population longitudinally

Methods

- **108 patients** with diagnosis of lumbar stenosis with claudication that met inclusion criteria were included
 - All patients treated by 4 spine surgeons at tertiary spine center
- **PROMIS, ODI, and VAS scores** were collected preoperatively, at 1-4 months, and at 6 months
- Correlations between ODI and VAS with PROMIS physical function and pain respectively were quantified using Pearson correlation coefficient measurements and analyzed for significance with t-test

Results

- 108 (100%) of patients completed questionnaires at preop
- 65 (60%) of patients completed questionnaires at 1-4 months
- 34 (31%) of patients completed questionnaires at 6 months
- Patients showed significant improvements in ODI, VAS, PROMIS physical function, and PROMIS pain interference ($p < 0.01$)

Results

- ODI and PROMIS physical function correlation
 - Strong negative correlation
 - Preop
 - $R = (-0.69)$
 - 1-4 mo follow up
 - $R = (-0.73)$
 - 6 mo follow up
 - $R = (-0.62)$
 - All data significant- Student t test ($p < 0.05$)

Results

- VAS leg pain and PROMIS pain correlation
 - Inconsistent positive correlation
 - Preop
 - $R = (0.39)$
 - 1-4 mo follow up
 - $R = (0.41)$
 - 6 mo follow up
 - $R = (0.61)$
 - All data significant- Student t test ($p < 0.05$)

Results

- VAS back pain and PROMIS pain correlation
 - Inconsistent positive correlation
 - Preop
 - $R = (0.45)$
 - 1-4 mo follow up
 - $R = (0.53)$
 - 6 mo follow up
 - $R = (0.74)$
 - All data significant- Student t test ($p < 0.05$)

Conclusions

- **PROMIS physical function** scores have a strong negative correlation with ODI scores at baseline and in the early postoperative course in patients undergoing surgery for lumbar stenosis with claudication
- **PROMIS pain interference** scores have an inconsistent positive correlation with VAS leg and back pain scores at baseline and in the early postoperative course

Conclusions

- Surgeons may factor these outcomes into the delivery and interpretation of patient reported outcome measures in patients with lumbar stenosis with claudication undergoing surgery
- Use of PROMIS physical function for this patient population may improve completion of outcome measures in the office and reduce administrative burden while still providing reliable outcomes data

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