

P53 Insights from PROMIS on impact of adolescent idiopathic scoliosis on psychosocial well-being and physical function

Donna Oeffinger¹, Henry Iwinski¹, Vishwas Talwalkar¹, Rolando Roberto², David Dueber³, Anita Bagley²

¹Shriners Children's, Lexington, USA. ²Shriners Children's, Sacramento, USA. ³University of Toledo, Toledo, USA

Objective: PROMIS assessments are beneficial alongside standard care for patients with adolescent idiopathic scoliosis (AIS) but interpreting scores and identifying those struggling more than peers can be challenging. This study established PROMIS scores for the AIS population and assessed if those with AIS differ from typical peers. Thresholds to identify individuals with 'at risk scores' were defined. Relationships among patient reported outcome(PRO) scores that assess psychosocial well-being and physical function were investigated.

Methods: A convenience cohort of 95 patients(age14.1±1.7years;primary curve of 33±13°) with AIS completed questionnaires (SRS-22r, SAQ, PODCI, PROMIS). Analyses included descriptive statistics, unpaired t-test comparing to typical peers and correlations. Scores on PRO domains for the lowest interquartile groups(LowIQR) were compared to remaining cohorts(RC) using t-tests and differences evaluated using Cohen's d(ES).

Results: Study cohort reported psychosocial well-being scores similar to typical peers. PROMIS scores: Mobility(MOB:52.9±7.5; IQR Q1≤46.0 Q4≥59.0; 54% ceiling); Upper Extremity (UE:53.8±5.2; IQR Q1≤49.0 Q4≥57.0; 69% ceiling); and Peer Relationships (PR:54.8±8.9; IQR Q1≤46.7 Q4≥64.4; 35% ceiling). Correlations among PROMIS domains were moderate. Mobility demonstrated moderate correlations with other function measures and with self-image and mental health PROs. Low IQR groups for PROMIS MOB, UE and PR reported significantly worse scores than RC on most PRO domains with ES indicating clinically noticeable differences. LowIQR groups scores were below typical peers on SRS-22r Pain (MOB:LowIQR 3.7±0.8;RC4.3±0.6; UE:LowIQR3.9±0.8;RC4.3±0.6; PRLowIQR/RC4.1±0.7) and Mental Health (MOB:LOWIQR3.4±0.9;RC4.2±0.8; UE:LOWIQR3.6±0.9;RC4.1±0.7;PR(LowIQR 3.4±0.9;RC4.0±0.7), and PODCI domains.

Conclusions: PROMIS guidelines use means of 50 and SDs of 10. Reference cut points may not be sufficient for clinical interpretation. Most patients with AIS score within normal ranges. Interplay among psychosocial well-being domains and physical function are important to recognize. Ceiling effects may limit sensitivity to detect change. Patients in the PROMIS LowIQR groups score lower on psychosocial domains. Using IQR thresholds to identify these individuals can help predict which patients are at risk of negative psychosocial impacts and could benefit from interventions targeting psychosocial well-being, mitigating the potential negative impact of AIS