P94 Are PROMIS scores sensitive to functional differences in children with lower limb amputations?

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Objective: PROMIS measures are used in monitoring pediatric orthopedic conditions, but normative values for children with lower limb amputations (LLA) are not well established. If PROMIS scores are sensitive to functional differences, they could help assess treatment impact. This study evaluated whether PROMIS scores reflect differences based on amputation level and laterality (unilateral (UNI) vs. bilateral (BIL)).

Methods: Self-reported PROMIS measures (Mobility (MOB), Pain Interference (PI), Peer Relationships (PR), Upper Extremity (UE)) were completed by 794 individuals (mean age14.6±3.2) with LLA. One-way ANOVAs tested differences in laterality and amputation level (Significance $p<0.01$). MOB Groups were formed based on interpretation cut-points: normal, mild, moderate, severe.

Results: Entire cohort (EC) included 454boys/340girls; 656UNI/138BIL; 203 acquired/591congenital with mean scores: MOB 44.8±9.6, PI 46.3±9.8, PR 51.1±9.8, and UE 49.6±9.8. MOB Groups distributions: 45% Normal; 22% Mild; 26% Moderate; and 7% Severe. MOB Groups distributions were UNI: 50% Normal; 21% Mild; 23% Moderate; and 5% Severe; and BIL: 22% Normal; 23% Mild; 37% Moderate; and 18% Severe. Patients with BIL amputations scored significantly lower MOB(39.2±8.4;45.8±9.4) and UE (44.6±11.7;50.9±9.1) than those with UNI.

MOB scores by amputation level were: *UNI*: PFFD (N=66;45.5±8.4); Trans-femoral (TF;N=16;41.4±10.1), Knee Disarticulation (KD;N=87;43.7±9.5); TransTibial (TT;N=138;44.8±9.5); Ankle Disarticulation (AD;N=238;47.6±9.5);Partial Foot (PF;N=77;46.3±9.3), with AD vs. KD statistically significant. *BIL*: PFFD (N=2;38.5±3.5); TF (N=6;33.3±8.9); KD (N=44;36.6±7.5); TT (N=27;40.0±7.2); AD (N=33;40.6±8.5); PF (N=9;47.0±11.1) with PF statistically better than KD and TF.

For EC, MOB moderately correlated with PI (r=-0.49) and UE (r=0.47). Within UNI and BIL groups, PRO score comparisons based on MOB Groups revealed significant differences between levels for PI, UE, and PR scores, with scores worsening with increasing impairment level.

Conclusions: Overall pediatric patients with LLA score well on PROMIS MOB, UE, PI and PR, yet 50% of UNI and 78% of BIL patients reported at least mild MOB impairment. MOB has clinical utility as it was shown to be sensitive to differences between laterality and amputation level. MOB measured the expected decreased mobility in patients with bilateral and more proximal amputations.