O100 Exploring PROMIS scores in patients with pediatric lower limb deficiency across types and treatments

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Objective: PROMIS measures offer standardized scoring to assess patients and track outcomes. The lack of information about PROMIS for pediatric patients with congenital lower limb deficiency (LLD) reduces their applicability within this population. This study characterizes PROMIS scores in pediatric patients with LLD, by LLD type: femoral (FEM), fibular (FIB), or tibial (TIB), and treatment: limb lengthening (LL), amputation (AMP), or none/other (NO).

Methods: PROMIS Mobility MOB), Pain-Interference (PI), Peer-Relationship (PR), and Upper-Extremity (UE) scores obtained from 652 patients (8-18years; 303Female/349Male) with LLD (FEM:N=266, FIB:N=298; TIB:N=96), treated with LL, AMP, or NO (N=75, N=335,N=251, respectively) were reviewed. Differences were evaluated using one-way ANOVAs. MOB impairment groups were formed using interpretation cut-points: normal, mild, moderate, severe.

Results: Entire cohort (EC): MOB (46.1±9.9); PI (46.4±9.6); UE (51.0±8.9) and PR (52.8±10.0) fall within normal ranges. MOB (BIL:41.2±9.0;UNI:47.3±9.8) and UE (BIL:46.3±11.5;UNI:52.1±7.8) scores were worse for bilateral (BIL) involvement than unilateral (UNI).

Within BIL group, MOB scores significantly differed by deficiency type (FIB:44.6±9.2 vs.FEM:39.6±9.0;FIB vs.TIB:38.5±6.8) and UE (FEM:43.2±12.9 vs FIB:49.7±9.6) and within UNI group, for MOB (FIB:49.3±9.9 vs. TIB:44.8±9.7; FIB vs FEM:45.7±9.2); UE (FIB:53.3±6.5 vs. TIB:49.2±10; FIB vs. FEM:51.6±8.0) and PI (FIB:44.2±10.0 vs.TIB:48.5±9.9;FIB vs. FEM:47.67±9.4).

Within LLD groups, significant differences in MOB scores between treatment groups were seen. FEM: AMP=44.5±9.1; LL:41.2±9.1 and NO=45.6±9.7, with LL significantly worse than NO. FIB: AMP=48.6±9.9; LL:41.9±10.7 and NO=49.6±9.5, with LL group significantly worse than AMP and NO groups.

MOB scores for 51% of EC were within normal range, with 18%Mild, 25%Moderate, and 6%Severe. Impairment distributions below normal by treatment subgroups: AMP(17%Mild;27%Moderate; 6%Severe); LL(28%Mild;29%Moderate; 15%Severe); NO (16%Mild;21%Moderate; 4%Severe); and LLD types: FEM(20%Mild;28%Moderate; 7%Severe); FIB(16%Mild;17%Moderate; 5%Severe); TIB(17%Mild;35%Moderate; 7%Severe) provides insight into impairment level distributions by treatment or deficiency type.

Conclusions: PROMIS measures are useful tools in quantifying varying levels of impairment within the LLD population and for assessing differences among treatment modalities. Using PROMIS to identify patients with mobility impairments below normal can guide targeted clinical management.