

Paper #132

## Can We Stop Asking So Many Questions?: Evaluating Responsiveness in Selected Patient Reports Outcome Measures, A Delaware-Oslo Cohort Study

Jessica L. Johnson, DPT, UNITED STATES

James J. Irrgang, PT, PhD, FAPTA, UNITED STATES

May Arna Risberg, PT, PhD, NORWAY

Lynn Snyder-Mackler, PT, ScD, FAPTA, UNITED STATES

University of Delaware  
Newark, DE, UNITED STATES

### Summary:

We analyzed the responsiveness of three patient-reported outcomes from pre-op to 5 years after ACLR to evaluate the performance of a single item global rating against gold standard measures (IKDC-SKF and KOS-ADLS). While the IKDC-SKF performed best overall, the single item Global Rating Score also performed well and may be an acceptable alternative for clinical practice.

### Abstract:

### Background

Selecting appropriate patient reported outcomes measures (PROMs) is a challenge faced by all clinicians. With a multitude of measures and a desire to gather all relevant data, patients can be filling out multiple PROMs, which is time consuming and often includes redundant questions. For patients with long recoveries, such as those after anterior cruciate ligament reconstruction (ACLR), PROMs must also capture a wide range of function, from immobilization to return to sport. Objective: The purpose of this study was to evaluate responsiveness of the single item Global Rating Score (GRS) compared to the 18 item International Knee Documentation Subjective Knee Form (IKDC-SKF) and the 14 item Knee Outcome Survey Activities of Daily Living (KOS-ADLs). Methods: 300 athletes after ACL injury were recruited to participate in pre-operative perturbation training. 218 chose to have an ACLR and were followed for 5 years. We collected IKDC-SKF, KOS-ADLs, and GRS at pre- and post-training, and 6, 12, 24, and 60 months after ACLR. We evaluated responsiveness via effect size (change in mean score in baseline standard deviation units; pre-training as baseline) and the presence of a ceiling effect (proportion of patients with the maximum score; more than 15% was classified as having a ceiling effect). Results: The IKDC-SKF had the largest effect sizes at all time-points (post: 0.57, 6m: 1.03, 12m: 1.54, 24m: 1.66, and 60m: 1.52). The KOS-ADLs and GRS had small effect sizes post training, moderate effect sizes at 6 months, and large or very large at 12m, 24, and 60m. KOS-ADLs (post: 0.49, 6m: 0.67, 12m: 0.86, 24m: 0.92, 60m: 0.86) GRS (post: 0.39, 6m: 0.49, 12m: 1.00, 24m: 1.11, 60m: 0.98) All effect sizes peaked at the 24-month time-point, with minimal differences observed between 12m, 24m, and 60m. We observed a ceiling effect for both the KOS-ADL and GRS at 12m (16.6% and 18.0%), 24m (21.2% and 23.5%), and 60m (18.4% and 23.0% respectively) while the IKDC-SKF only showed a ceiling effect at 24 months (16.6%). The results were similar when only those with complete data sets across all time points were analyzed (n=114). Discussion: Selection of PROMs is a multifactorial decision, with factors having varying importance at different time-points. Early after injury or surgery, pain, swelling, and activities of daily living are more important, while questions about sports participation gain importance later in recovery. Additionally, ease of delivery and decreased time burden is important in clinical practice. The IKDC-SKF has the largest effects sizes and least presence of ceiling effects, thus the highest responsiveness to patient change. However, the GRS scale responds similarly to the IKDC-SKF and KOS-ADLs measures. The ease of use and patient specific nature of the question may mean that, for clinical practice, asking

# ISAKOS

**International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine**

12<sup>th</sup> Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

---

## Paper #132

only the GRS is appropriate and sufficient to assess patient status and progress.