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CORR Insights®: What is the Responsiveness and Respondent Burden of the New Knee Society Score?

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Where are We Now?

In the current study, Maniar and colleagues find that the New Knee Society Score (NKSS) is not only responsive to patient outcomes longitudinally, but also outperforms the more-dated WOMAC,

SF-12, and the original Knee Society Score (OKSS) questionnaires by the same metrics. The "price" of this improvement is an extra minute, on average, spent by the patient completing the questionnaire. Noble and colleagues [4] suggest that the better performance of the NKSS may be due to more-sophisticated methodologies for devising scoring questionnaires and shifting TKA procedures to a younger, more-active population.

Improvements in statistical methods and computing power have defined the modern "big data" era, but good data are always more important than big data. The NKSS was devised because the OKSS showed specific deficiencies in reliability and responsiveness [4], and the current study supports the use of the NKSS in longitudinal studies using patient-reported outcomes after TKA.

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Where Do We Need to Go?

Although the NKSS has better responsiveness than the other scores as defined by the net change normalized by either the standard deviation at baseline (Cohen's effect size) or the standard deviation of the changes in score (Standardized Response Mean [SRM]), neither one of these responsiveness estimates is necessarily definitive. Arguably, basing a decision on mean/standard deviation is only one mathematical step removed from basing the decision on the p value, and using p values for decisions can be risky [3]. The review of responsiveness coefficients by Norman and colleagues [5] compares and contrasts both of these metrics with other alternatives, recommending Cohen's effect size as best and SRM as an alternative to be interpreted with caution.

Generally, questionnaires have to approximate something that cannot be physically measured. The OKSS and NKSS are somewhat protected from this by being based partly on physical measurements, and in fact, the results of the current study show that while

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NKSS has the greatest responsiveness, OKSS has the second-best, and the objective NKSS has greater responsiveness than does the subjective NKSS.

How Do We Get There?

As the Greek scholar, Hercalitis once said: "The only constant is change." Soon, if not at present, a new patient with a Fitbit or iPhone may come in to our offices armed with years of activity data, which could potentially show changes in walking habits as the patient's condition worsens over time. The next generation of orthopaedic scoring tools may incorporate this data and combine it with patient and clinician assessments.

Developing revised patient scoring systems to account for changing demographics or take advantage of new medical technology (such as the widespread use of activity monitors) may be worth performing on a regular basis in order to ensure that the tests continue to accurately describe the changing patient population, given medical trends. For example, Quan and colleagues [6] revisited the Charlson Comorbidity Index, which was originally presented in 1984, to examine the effects of changing medical technology on mortality, and described an updated index, which performed comparable to the original, with some weights revised (HIV reduced, for example) and some comorbidities dropped completely. The Oswestry Disability Score might be the first one to be revisited, as it was presented in 1980 [2], making it the oldest on American Academy of Orthopaedic Surgeons' webpage listing patient-reported outcomes [1]. Noble and colleagues [4] and the current study offer a road map for how to update questionnaires and confirm their usefulness.

References

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