



# Editor's Spotlight/Take 5

## Editor's Spotlight/Take 5: Do Surgeon Expectations Predict Clinically Important Improvements in WOMAC Scores After THA and TKA?

Seth S. Leopold MD

When I was a resident, Dempsey Springfield MD—the Harvard University musculoskeletal oncologist, then at the height of his powers—visited our program and asked this provocative question: “What do patients want when they go to the doctor?” He waved away our responses; he wasn't looking for the obvious. It wasn't pain relief, return of

function, or even to get a diagnosis. “Patients want you to see the future for them,” he pronounced.

I assume that there was some overstatement for didactic impact in his answer, but it had impact; it's still in my ears almost 25 years later.

The problem is, we may not be all that great at this sort of prognostication. We can forgive ourselves for not being experts at picking stocks or ponies. Perhaps we can even allow that we won't always get it right for our patients with cancer, though it surely would be better if we could. But is it possible that experienced surgeons have a no-better-than-chance likelihood of anticipating whether a patient undergoing one of the most-common operations orthopaedic surgeons perform—total knee arthroplasty—will

improve enough to say that the procedure was worthwhile?

In this month's *Clinical Orthopaedics and Related Research*®, a provocative study by Hassan M. K. Ghomrawi PhD, MPH at Northwestern University (in collaboration with colleagues from the Hospital for Special Surgery and Weill Cornell Medical College), concludes exactly that [2]. The surgeons involved in this study are experienced, high-volume joint-replacement specialists from a leading international arthroplasty center. If a coin toss is as likely to give the right answer as a surgical recommendation from someone this experienced, we need to stop and ask why. (I note that they did much better when anticipating the results of THA, particularly for patients who were men, who had a BMI under 30, and who were older than 65 years of age).

The fact that the experienced, expert surgeons in this study were unable to anticipate whether a patient would benefit from TKA should be important—and concerning—to orthopaedic surgeons whether or not they perform knee replacements, since it

---

### A note from the Editor-In-Chief:

In “Editor's Spotlight,” one of our editors provides brief commentary on a paper we believe is especially important and worthy of general interest. Following the explanation of our choice, we present “Take Five,” in which the editor goes behind the discovery with a one-on-one interview with an author of the article featured in “Editor's Spotlight.”

The author certifies that neither he, nor any members of his immediate family, have any commercial associations (such as consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article. All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research*® editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or

policy of *CORR*® or The Association of Bone and Joint Surgeons®.

This comment refers to the article available at: DOI: [10.1007/s11999-017-5331-8](https://doi.org/10.1007/s11999-017-5331-8).

---

S. S. Leopold MD (✉)  
Clinical Orthopaedics and Related Research®, 1600 Spruce Street,  
Philadelphia, PA 19013, USA  
e-mail: [sleopold@clinorthop.org](mailto:sleopold@clinorthop.org)

# Editor's Spotlight/Take 5

gets to the heart of what patients look for when they come to us. How sure are we, really, when we shake hands and suggest an intervention to our patients that we are making a good decision? Perhaps the answer is “much less sure than we thought.”

This study was robust. It was prospective, the large majority of patients involved were accounted for, they were given ample time to recover from surgery (at least 2 years), and the outcomes tools employed were validated. They didn't hang the results on statistical differences, but rather on clinically important changes in patients' pain and function using the WOMAC scale. This is not a study we can wave away, as much as we might like to. Patients need us to see the future more accurately than this.

Join me as I go behind the discovery in the Take-5 interview that follows with the Senior Author of this fascinating article, Dr. Hassan Ghomrawi.

**Take-5 interview with Hassan M. K. Ghomrawi PhD, MPH, senior author of “Do Surgeon Expectations Predict Clinically Important Improvements in WOMAC Scores After THA and TKA?”**

**Seth S. Leopold MD:** *Congratulations on this important and well-conducted study. Let's jump right into the hard stuff: Imagine you're a patient considering TKA, but you're not sure.*



Hassan M. K. Ghomrawi PhD, MPH

*Your surgeon says he thinks it's likely to provide you with a substantial improvement in your pain and function. What does this recommendation mean to you, now that you've done this research?*

**Hassan M.K. Ghomrawi PhD, MPH:** First, it is important to acknowledge that in our study 79% of patients who underwent TKA achieved the minimum threshold for improvement in their function and 65% achieved the minimum threshold improvement in their pain relief. In other words, a large proportion of patients benefited from TKA, and the surgeon's recommendation for surgery, to me, seems generally valid. However, surgeons' expectations were no better than chance in distinguishing between those who did or did not improve after surgery. Thus, our study suggests that the recommendations are not specific to

me or my individual characteristics. Tailoring these recommendations to be patient-centered or fitted to the individual is what we are missing, and that remains poorly understood.

**Dr. Leopold:** *You looked at factors to try to improve the prognostication for TKA patients, but found none. How should your important findings change practice, and what kind of research will help us offer more-accurate predictions for patients undergoing TKA?*

**Dr. Ghomrawi:** Indeed, we looked at the prognostic power of surgeon expectations in a number of TKA patient subgroups and none of them were better than chance, although the sample sizes available did not permit us to exclude an effect. Our results suggest that surgeons may need to spend more time with patients undergoing TKA to understand their limitations and expectations. There may be factors that are currently overlooked that may help surgeons better predict outcomes of their patients. Long-term research studies are needed to develop prediction models that will identify patient-specific information, such as risks of complications and improvement in functional status and pain relief, which may inform these predictions. Pooling this information together, and making it available to the surgeon preoperatively may help the surgeon make

# Editor's Spotlight/Take 5

more-accurate predictions for patients being considered for TKA.

**Dr. Leopold:** *It seems critically important to have the kind of information you learned about THA and TKA for other operations. Since results differed here for TKA and THA, I assume we cannot generalize your findings to other common procedures—spine surgery, hand surgery, sports medicine, and the like. That being so, how might we get answers about surgeons' prognostic abilities for those other interventions?*

**Dr. Ghomrawi:** TKA and THA are generally perceived as similar procedures, yet our findings were different for these procedures, and so we cannot generalize to other procedures. Studies similar to ours need to be conducted for these other common surgical procedures. Fortunately, one of my coauthors, Dr. Carol Mancuso, has developed and validated surgeon versions of the expectations surveys [1, 3–7] for a number of these common orthopaedic procedures that will make such studies feasible.

**Dr. Leopold:** *Your findings about gender, age, and BMI were intriguing. Does this imply anything broader about diversity in orthopaedic surgery? Do you infer that generally fit men of a certain age are more capable at predicting results in patients who*

*look like themselves? What do you make of this set of findings?*

**Dr. Ghomrawi:** In our study, surgeon expectations were more accurate for nonobese patients who are older than 65 and have one or more comorbidities, and less accurate for the younger obese patients with no comorbidities. While it is possible that surgeons may be more capable of predicting the outcomes of those most like themselves (as is the case probably with gender differences), my hunch is that this accuracy is also driven by the current knowledge of outcomes of different subgroups.

**Dr. Leopold:** *Groups that ask such interesting questions generally have others in progress. What similarly provocative kinds of work can we look forward to from your group?*

**Dr. Ghomrawi:** We are currently investigating the extent of and reasons for discordance between THA patients' expectations and those of their surgeon. We are also investigating whether discordance in expectations adversely affects patient outcomes. If discordance matters, the results of these investigations will highlight the need for and pave the way to developing educational interventions aimed at reconciling these differences in expectations so that the patient and surgeon expectations are more aligned.

**Acknowledgments** The author would like to acknowledge Paul A. Manner MD and Montri D. Wongworawat MD, whose helpful suggestions improved the commentary.

## References

1. Cody EA, Mancuso CA, MacMahon A, Marinescu A, Burket JC, Drakos MC, Roberts MM, Ellis SJ. Development of an expectations survey for patients undergoing foot and ankle surgery. *Foot Ankle Int.* 2016 Dec;37:1277–1284.
2. Ghomrawi HM, Mancuso CA, Dunning A, Gonzalez Della Valle A, Alexiades M, Cornell C, Sculco T, Bostrom M, Mayman D, Marx RG, Westrich G, O'Dell M, Mushlin AI. Do surgeon expectations predict clinically important improvements in WOMAC scores after THA and TKA? *Clin Orthop Relat Res.* [Published online ahead of print March 28, 2017]. DOI: [10.1007/s11999-017-5331-8](https://doi.org/10.1007/s11999-017-5331-8).
3. Henn RF 3<sup>rd</sup>, Ghomrawi H, Rutledge JR, Mazumdar M, Mancuso CA, Marx RG. Preoperative patient expectations of total shoulder arthroplasty. *J Bone Joint Surg Am.* 2011;93:2110–2115.
4. Kang L, Nguyen J, Hashmi SZ, Lee SK, Weiland AJ, Mancuso CA. What demographic and clinical characteristics correlate with expectations with trapeziometacarpal arthritis? *Clin Orthop Relat Res.* [Published online ahead of print April 19, 2017]. DOI: [10.1007/s11999-017-5359-9](https://doi.org/10.1007/s11999-017-5359-9).
5. Mancuso CA, Cammisa FP, Sama AA, Hughes AP, Ghomrawi HM, Girardi FP. Development and testing of an expectations survey for patients undergoing lumbar spine surgery. *J*

# Editor's Spotlight/Take 5

- Bone Joint Surg Am.* 2013;95:1793–1800.
6. Mancuso CA, Cammisa FP, Sama AA, Hughes AP, Girardi FP. Development of an expectations survey for patients undergoing cervical spine surgery. *Spine (Phila Pa 1976)*. 2013;38:718–725.
7. Mancuso CA, Wentzel CH, Ghomrawi HMK, Kelly BT. Hip preservation surgery expectations survey: A new method to measure patients' preoperative expectations. *Arthroscopy*. 2017;33:959–968.