Editor's Spotlight/Take 5

Editor's Spotlight/Take 5: Do Patient Race and Sex Change Surgeon Recommendations for TKA?

Seth S. Leopold MD

The great strength and the great shortcoming of medicine is that it is practiced by human

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."

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

beings. While we can imagine a world in which computers make us better diagnosticians [4], and we remain agnostic about whether robots make us better surgeons [3], the qualities we look for in a healer are distinctly, uniquely human: Empathy, compassion, and the ability to share encouraging words and gestures.

Somewhat vexingly, human empathy and compassion often come packaged in units that contain other distinctly human traits, including prejudice. Large studies have found racial disparities in usage of surgical procedures [5], including TKA [6], despite attempts to minimize them. And focused, scenario-based experiments have shown that surgeons are less likely to recommend TKA to women than men in similar clinical situations [1], and less likely to engage women than men in shared decision-making [2].

However, that scenario-based experimental study on gender and surgeon recommendations [2] drew from a geographically narrow physician population, and may have been influenced by differences in the presentation styles of its two sample patients, one man and one woman (each of whom presented to several

dozen family physicians and orthopaedic surgeons), which was the very subject the study sought to evaluate. And those older studies on racial discrepancies [5, 6] could not evaluate whether the observed differences in utilization reflected actual differences in need.

Against this backdrop, Christopher J. Dy and colleagues at the Hospital for Special Surgery crafted a video-based simulation employing four actors – a white man, who served as the control, a white woman, a black man, and a black woman – each of whom delivered an identically-scripted presentation of advanced, activity-limiting knee arthritis. Participating surgeons, who generally were high-volume arthroplasty providers and who knew only that the topic of the experiment was clinical decision-making (and not that it involved questions of race or gender), viewed the control patient's story and were randomized to see one of the other three videos. Afterwards, they were asked to decide whether to offer TKA to each patient.

The surgeons did well. They recommended surgery in similar proportions regardless of each patient's gender or race. When there were

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discrepant recommendations, they did not consistently tilt either towards or away from surgery based on race or gender. Importantly, the experiment was powered to detect even reasonably small differences, should they have been present.

Even so, we probably are less effective than we might be at identifying the biases and prejudices that accompany us into our exam rooms. While this study's findings are reassuring in that surgeons did not withhold surgery from patients based on race or gender when surgery plainly was indicated, so many other questions remain on this critical topic. Would this finding hold if the scenario were a closer call? Are there less-labor-intensive ways to study this important topic? What kind of study is most likely to give us the answer – simulated patients, real patients used in experimental studies [2], assessments of usage from large databases, or some other approach yet-to-be devised? Join me as we go behind the discovery with Dr. Dy in the Take 5 interview that follows.

Take Five Interview with Christopher J. Dy MD, first author of “Do Patient Race and Sex Change Surgeon Recommendations for TKA?”

Seth S. Leopold MD: *Congratulations on a well-done study. So, should we breathe a sigh of relief – there is no bias in surgical practice?*

Christopher J. Dy MD, MPH: Thank you for your thoughtful commentary on our paper. While I wish we could say that there is no bias in surgical practice, I think bias is an inherent and inescapable component in how we practice. Understanding our own biases and how they may consciously and subconsciously affect our decision-making processes is critical to providing high quality care to all patients.

Dr. Leopold: *Broadly speaking, what are the possible kinds of studies that can help us get a better handle on this important topic, and what do you see as the benefits and weaknesses of each of those study designs?*

Dr. Dy: You summarized the available types of studies very well in your commentary. Briefly, there are simulation-type studies like ours, experimental models utilizing “real” patients, and cross-sectional investigations using administrative data or registries. While the simulation studies give the advantage of having more control over the information presented to the clinician, these studies are less likely to emulate the decision-making process that occurs in real-time clinical practice. Experimental studies are better at replicating actual clinical decision-making, but the generalizability of the findings is limited to how those specific patients are perceived by the sample of clinicians studied. These

Christopher J. Dy MD, MPH

investigations also are fraught with ethical concerns centered on using clinicians in practice as research subjects. Lastly, cross-sectional studies have the advantage of giving a perspective on how things are actually done in practice, but there are too many variables simultaneously in play, making it much harder to focus on the contribution of one or two characteristics (such as patient race and/or sex) on decision-making. There is no one perfect way to evaluate a complex issue like this, but we try to draw on the advantages of each experimental approach while recognizing their respective limitations.

Dr. Leopold: *You studied gender and race; what other kinds of bias should*

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providers be aware of as potentially germane to clinical care, and – at least briefly – what do we know about them that can inform our practices?

Dr. Dy: I agree that gender and race are important parts of the puzzle, but there are many other patient characteristics that we should consider in our decision-making. Aside from disease-specific components of patient presentation, we should consider elements such as health literacy (both in general and disease-specific), level of patient engagement (often mistakenly referred to as “compliance”), patient expectations, and the degree of interest the patient has in sharing the decision-making process. All of these elements can introduce bias into the way that we practice – we may be more likely to recommend surgery for a patient who is educated about his or her condition, has reasonable expectations for postoperative recovery, seems like he or she will follow our postoperative recommendations, and participates “just the right amount” in decision-making. Conversely, we may act dismissively and recommend non-operative management for patients who are perceived as obtuse, difficult, and disinterested during the initial encounter. While these are extreme examples, thinking about these elements can help us focus on providing care that is high quality and patient specific.

Dr. Leopold: *The scenario you tested was strongly “pro-surgery.” In light of*

that, we can conclude that surgeons do not withhold elective surgery from patients based on race or gender when those patients are quite likely to benefit from the intervention. But this leaves us with at least two other situations: Patients who should not have surgery, and patients whose presentation is uncertain in terms of the benefits that surgery might offer. How might bias enter the picture in these situations?

Dr. Dy: While bias is inescapable, I think it would be less likely to play a role in scenarios where nonoperative management is quite clearly recommended based on the clinical data. In those scenarios, where the presentation is not quite as “clear cut,” surgeon bias probably plays the biggest role. We all tend to recall the characteristics of the patients that do well and do not well in practice, leading us to consciously and subconsciously rely on these personal experiences to guide our decision-making for patient in this “gray area.”

Dr. Leopold: *No doubt the principles behind your study – fairness to all patients, equality in our approaches to treatment – are on the minds of insurers and our public servants. And we all are aware that the use of performance-related benchmarks is on the rise in clinical care. How do you envision “systems” helping to guide our practices in terms of*

these important principles in the future?

Dr. Dy: One of the biggest advantages of the recent emphasis on quality reporting and benchmarks is the increased investment and interest in data collection. These “systems” provide data that we can use to perform cross-sectional studies to evaluate what is actually happening in practice regarding equitable utilization of surgical procedures. These types of studies can be done on a national, regional, or institution-specific level. More focused and targeted studies of communities and patients using both quantitative and qualitative methods can then be designed to further investigate the trends identified from the “big data” cross-sectional studies.

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