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Editor's Spotlight/Take 5

Editor's Spotlight/Take 5: Does a Patient-centered Educational Intervention Affect African-American Access to Knee Replacement? A Randomized Trial

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That differences in health and utilization of medical services exist across gender, ethnicity, and race is uncontroversial [17, 19]. Some of these differences are so severe and so plainly associated with poorer health [7, 20] and even mortality [15] that we characterize them as important healthcare disparities.

But the story becomes more complicated when we observe differences across sociodemographic groups in usage of elective interventions like knee replacement [4, 16]. Are these usage differences caused by impediments to access and provider prejudices, or are they the result of valid personal decisions made by patients who may be caregivers for others or primary wage-earners? Might these differences be explained by patients' perceptions of discrimination [2, 21] or by lower levels of trust in a healthcare system that in fact has not always treated all patients equally [5, 18]? Such questions should matter to all of us, regardless of the particular type of surgery each of us might perform.

This month's Editor's Spotlight article, "Does a Patient-centered Educational Intervention Affect African-American Access to Knee Replacement? A Randomized Trial," is an impressive multicenter study representing the collaborative efforts of investigators from the University of Pennsylvania, the Philadelphia Veterans Affairs Medical Center, and the University of Pittsburgh. This group, led by Said A. Ibrahim MD, MPH has made many contributions in the past on the topic of healthcare disparities [8, 10, 13]. Although black patients experience a greater burden of disease from osteoarthritis (OA) [9], they are much less likely to undergo knee replacement even when insurance status is not part of the picture [12]. Based on prior work [1, 11], Dr. Ibrahim's group posits that patient preferences rather than other factors may account for the fact that black patients undergo arthroplasty less often than patients of other races. In this month's *Clinical Orthopaedics and*

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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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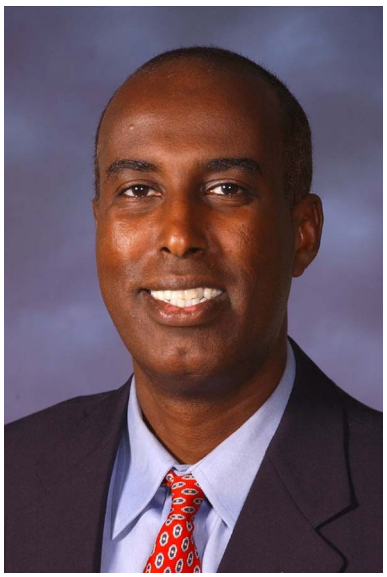
Related Research®, their team explores whether a shared decision-making approach might put more black patients at ease with a potentially ameliorative surgical approach, and in so doing, modify this preference.

The short answer is that it does not. A combination of a decision aid and what the authors describe as "motivational interviewing" did not increase the number of black patients referred to orthopaedic surgeons, nor did a larger proportion of the intervention group undergo knee replacement. This large, randomized trial achieved near-complete followup, and the groups were well matched in terms of all likely confounding variables. It seems plain that the study interventions simply did not move the needle in the direction the investigators had hoped.


Said A. Ibrahim MD, MPH.

No-difference studies like this are important for many reasons. Such studies prevent duplication of scarce research resources on unproductive avenues, and they make it less likely that positive-outcome bias will result in overestimating the efficacy of our interventions. For those reasons, among others, we are glad to publish them [14]. But the fact that this thoughtful approach did not work raises a host of questions, and leaves us with a persistent problem. Should we conclude that this specific set of interventions was ineffective, or should we conclude that the broader approach used here (decision aids and motivational interviewing) are a dead end, at least for this purpose? In either case, what might be the most fruitful next steps to explore? And regardless, these disparities persist, and that fact, which is a problem, should matter to all orthopaedic surgeons. We must now look for other ways to address it.

Join me in exploring this complex and important topic with Said A. Ibrahim MD, MPH, in the Take-5 Interview that follows.

Take Five Interview with Said A. Ibrahim, MD, MPH, Senior Author of "Does a Patient-centered Educational Intervention Affect African-American Access to Knee Replacement? A Randomized Trial"

Seth S. Leopold MD: *Congratulations on this fascinating and important work. Let's begin the interview where the Spotlight commentary left off: Should we conclude that this specific set of interventions were ineffective but that other decision aids might be worth exploring, or should we conclude that the broader approach used here (decision aids and motivational interviewing) are a dead end?*

Said A. Ibrahim MD, MPH: In the current study, we asked two simple questions: (1) Does a patient-targeted intervention consisting of a decision aid and motivational interviewing improve the proportion of referrals of black patients with knee OA to orthopaedic surgery? (2) Does the intervention increase patients' willingness to undergo TKA?

We knew from our previous work in this area that a knee OA decision aid with or without motivational interviewing improved patient knowledge and reshaped willingness up to about 3 months. The primary goal of the cur-

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rent study was to see if the improved patient knowledge and potentially willingness actually was associated with a clinically meaningful outcome, that is, referral for orthopaedic evaluation (and eventual willingness to undergo surgery). In this particular patient sample, we did not find that to be the case. However, this is not to say that the intervention is wrong or the patient population is ill-suited for such intervention. Instead, it might just reflect the strategy we used or how we assessed the outcomes. In a followup project, we are investigating whether a simplified strategy, one that uses just a decision aid rather than a combination of a decision aid and motivational interviewing, might be more effective in increasing the willingness of minority patients to consider surgery.

Dr. Leopold: *What do you see as the most promising other next steps to try to mitigate the healthcare disparities you and others have observed in orthopaedic surgery?*

Dr. Ibrahim: The reasons for ethnic variations in joint replacement utilization are complex and multifactorial. Interventions directed at one element of this complex relationship are not going to solve the entire problem, but they are better than no action. There are several important options to consider. First, we must continue to explore effective educational interventions that work for most patients. We strongly believe that as long as joint replacement remains an elective treatment where patient choice is paramount, patient education about the risks and benefits of joint replacement delivered at the right time, for the right patient, offer promise in reduced disparities in this treatment. If nothing else, such intervention might reduce variations in decision-making and patient regret. Second, healthcare-system-level interventions that realign incentives may help diminish care variations. For example, the Comprehensive Care for Joint Replacement Model recently introduced by Medicare could help improve quality of postsurgical care for all patients but most specifically for minority patients. There is some evidence that quality and intensity of postsurgical care varies by race and that more minority patients receive postsurgical care at institutions that are often of lower quality. If true, this might, in part, explain higher readmission rate for minority patients after joint replacement. But the higher risk of postsurgical complications among minority patients may send the wrong message to minority communities about the safety of joint replacement. And conversely, the bundled payment model introduced by Medicare, although designed to reduce cost of care, might inadvertently improve outcomes for minority patients. On the other hand, there is risk that the new reimbursement model might bring increase cherry-picking of patients by healthcare systems that seek to avoid socially high-risk patients. Such behavior may actually exacerbate racial disparity in access to joint replacement. Lastly, efforts to educate the orthopedic community about the existence and magnitude of racial disparities in access to joint replacement might help raise awareness among physicians and increase their willingness to spend more time with patients to help explain the risks/benefits of the treatment.

Dr. Leopold: *One can imagine some reasonable explanations for the racial and sociodemographic disparities you've observed in the past in terms of willingness to undergo arthroplasty: Some patients may be primary wage-earners or caregivers for others, who cannot take time away. Since most orthopaedic surgeons are white men, perhaps others—women, and racial or ethnic minorities—may harbor some skepticism based on past experiences involving prejudices on the part of caregivers. To what degree might these kinds of issues contribute to the findings you have observed in some of your earlier work, and might they be reasonable reactions on the part of patients?*

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Dr. Ibrahim: Numerous studies have shown that patient preferences (willingness) vary by race and ethnicity, and that these preferences influence medical care utilization. In the area of joint replacement, other investigators have also reported marked racial variation in patient willingness. For example, Figaro et al. [6] used focus-group methodology to examine black patients' attitudes and preferences regarding knee/hip arthritis care and joint replacement. They, too, found racial differences in attitudes and preferences regarding knee and hip OA treatments, including joint replacement. In another study that examined willingness to pay for knee replacement among a sample of patients in Houston, Texas, USA, black and white participants differed in their willingness to pay for knee replacement even after adjusting for age, income, educational level, and other factors [3]. So, we are confident that patient preference for treatment indeed varies by race/ethnicity. However, the reasons for this variation still need to be explained. The possible causes may include household and social setting, trust in the healthcare system, and cultural patterns of doctor-patient communication.

Dr. Leopold: *Many surgeons are appropriately reluctant to talk patients into elective interventions, or even to be perceived as trying to do so. Yet here, one of your techniques was "motivational interviewing." How concerned were you that patients might have felt pressured to undergo elective surgery as a result of the study interventions, or that your interventions might have represented a form of case-finding?*

Dr. Ibrahim: Our investigative team extensively discussed the appropriateness of using motivational interviewing technique in this particular setting. Motivational interviewing is used widely in the management of behavioral health such as mental health, and more recently in the management of chronic diseases such as hypertension. The principles of motivational interviewing dictate that there is less need to push patients into one direction or another in the decision-making process. A well-designed motivational interview should help patients confront their own internal doubts and hopes until they arrive at a point of decision that reflects their expectations and preferences. So, we were meticulous in our design of the motivational interview to present not a judgment but reflections. We wanted to ensure the following key goals: Assess readiness, importance, and confidence; elicit barriers, concerns and positive motivational statements; summarize pros and cons; assess patient values and goals; and lastly, provide a menu of options. It is also important to note that our study design involving the motivational interview was extensively peer reviewed both by NIH and VA study sections. No concerns were expressed that our use of motivational interviewing in this particular setting was likely to lead to inappropriate surgery.

Dr. Leopold: *Your team does not shy from the tough topics, and I hope that this interview will result in readers looking up your past work, all of which has been just fascinating. What research directions are you most excited about going forward from here?*

Dr. Ibrahim: One of the major criticisms of our previous studies in this area has been that we intervened on patients at the primary care level where decisions about joint replacement are often not made. So, in response to that fair criticism we designed a study where the intervention is now delivered at the time when patients are actually making decisions about joint replacement in the orthopedic setting. Another line of research that we are excited about has to do with racial variations in postsurgical care. We are particularly interested in how improved quality and intensity of postsurgical might improve minority patients' outcomes after joint replacement and consequently their overall perception about the effectiveness of

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the treatment in the right hands, for the right patient, in the right system.

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