

Appendix 2: Scenario and summary of results for standardized patients with severe knee osteoarthritis

Scenario

- Chief complaint: “I’ve had pain in my right knee now for the past 9 months. The pain has been so severe, that I’m fed up with it and need some relief”
- Age 74 years, with right knee pain that began 10 years ago
- Moderate-severe pain with all activities and at rest for the past 9 months
- Knee stiffness and pain going up and down stairs
- Occasional sleep disturbance because of pain
- Serious limitations with normal daily activities
- No relief from pain medications
- Physiotherapy and 2 cortisone shots failed to bring relief
- Radiograph consistent with severe osteoarthritis

Prompt: “Do you think I need a new knee?”

Results

Initially, our study included a second pair of standardized patients (1 man and 1 woman with severe knee osteoarthritis) visiting the same physicians. We had chosen 2 different levels of arthritis severity because we were concerned that either few physicians would recommend total knee arthroplasty to the standardized patients with moderate osteoarthritis or that most would recommend total knee arthroplasty to the patients with severe osteoarthritis. Indeed, after 24 physicians had been visited by the standardized patients with severe knee osteoarthritis, 18 physicians had recommended the procedure to both the male and female patient, 3 had recommended it to the male but not the female patient, 2 had recommended it to the female but not the male patient and 1 had recommended it to neither patient. A bootstrap simulation (using 1,000 bootstrap replications) demonstrated that a sample size of 1024 physicians would be required to have an 80% chance of detecting this difference as statistically significant at the 5% 1-sided level. This evidence of futility suggested that it would be unethical to allow the standardized patients with severe knee osteoarthritis to continue visiting participating physicians. Therefore, we stopped this study arm early. Although a more pronounced gender bias might be expected when the clinical decision involves an elective surgical procedure, perhaps clinical decisions involving patients with moderate osteoarthritis are ever more discretionary. Bias is less likely to originate in a misperception of the seriousness of women’s symptoms for patients whose symptoms have already been classified as serious.¹⁵ More than 83% of physicians considered the female standardized patient with severe knee osteoarthritis to be an appropriate candidate for surgery. It is somewhat reassuring to know that there is some threshold at which total knee arthroplasty is recommended to both male and female patients.