Racial Disparities in Lower Extremity Arthroplasty Outcomes and Use

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abstract

Race-associated disparities often occur in patients who undergo lower extremity total joint arthroplasty (TJA). Although it is imperative to elucidate and describe the disparities in race and ethnicity that may influence patient perception, satisfaction, and surgical outcomes, there is a paucity of reports detailing the nature of potential racial disparities in TJA. Therefore, the purpose of this review was to examine racial and ethnic disparities in the (1) physician–patient relationship; (2) use of TJA; (3) intraoperative and 30-day postoperative complications; and (4) patient-reported outcomes. Although there are limited studies that evaluated this topic, it has been shown that there are race-specific differences in physician–patient relationships. Specifically, African American patients report lower satisfaction rates in communication with their physician than their Caucasian counterparts and physicians were more apt to describe African Americans as less “medically cooperative.” The majority of the studies the authors found regarding TJA use indicated that African Americans and Hispanics were less likely to undergo lower extremity TJA than Caucasians. Furthermore, racial minorities may have higher 30-day readmission and intra- and postoperative complication rates compared with Caucasians. Despite these compelling findings, concrete conclusions are difficult to make due to the presence of multiple confounding patient factors, and more studies examining the racial and ethnic disparities in patients with TJA are needed. [Orthopedics. 2015; 38(12):e1139-e1146.]

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Approximately 30% to 35% of the population in the United States is composed of ethnic minorities (African Americans, Hispanics, Asians, and Native Americans). Racial and ethnic disparities in patient-related health care and decision making have been well documented.\(^1\)\(^-\)\(^5\) A racial disparity is defined as a difference in the care among various racial groups that cannot be attributed to preferences, clinical need, or lack of access to care.\(^6\) Although highlighting racial disparities may be uncomfortable and complex for practitioners, we have an ethical and professional obligation to provide equal and competent care for every patient. Therefore, it is imperative that we identify areas where disparities may exist and work toward eliminating them.

In particular, several initiatives from the American Academy of Orthopaedic Surgeons (AAOS) Diversity Advisory Board have aimed at providing culturally specific care for patients requiring various orthopedic procedures, including those undergoing lower extremity total joint arthroplasty (TJA).\(^1\)\(^-\)\(^7\) These initiatives include a diversity symposium at the annual AAOS meeting and joining with their Communication Skills Mentoring Program to ensure education to practitioners on culturally competent care.\(^1\) Multiple studies have shown that racial minorities undergo TJA much less frequently than Caucasians.\(^8\)\(^-\)\(^15\) Furthermore, studies have shown higher complication rates among these ethnic minorities,\(^16\)\(^-\)\(^24\) and some have even showed an association between disparities and patient-reported and functional outcomes.\(^25\)\(^-\)\(^28\) The following review will highlight more specific details of these disparities and outcome differences.

To ensure the continued success of patients undergoing TJA, it is imperative to elucidate and describe the disparities in race and ethnicity that may influence patient’s perceptions, satisfaction, and surgical outcomes. Currently, there is a paucity of reports detailing the nature of potential racial disparities in TJA. Therefore, the purpose of this review was to examine the potential manifestations of racial and ethnic disparities in the (1) physician–patient relationships; (2) use of TJA; (3) intraoperative and 30-day postoperative complications; and (4) patient-reported outcomes following lower extremity TJA in the United States.

**Materials and Methods**

To appropriately assess areas where disparities may exist, an extensive literature search was performed using the PubMed, EMBASE, and Ovid databases. The authors specifically evaluated all potentially relevant reports from January 2000 until January 2015. The following search string was used: race[title] OR racial[title] AND disparity[title] AND arthroplasty*[title] OR replacement*[title]. This yielded a total of 149 reports. The following studies were excluded: (1) non-English studies; (2) strictly qualitative analyses; (3) those performed outside the United States; and (4) case reports. Preference was given to studies using large national databases, such as the National Surgical Quality Improvement Program (NSQIP) or the Nationwide Inpatient Sample (NIS).

After a thorough review, 34 reports were found, and after cross-referencing for additional sources, 12 additional studies were included, leading to a total of 46 reports used in this review. Specifically, the authors extracted data related to the physician–patient relationship, arthroplasty use rates among different racial groups, incidences of intra- and postoperative complications, and patient-reported outcomes.

**Physician–Patient Relationship**

A patient’s background, beliefs, and perceptions often first manifest themselves in their physician–patient interactions. To properly assess where disparities may exist, it is critical, but difficult, to evaluate the quality of the physician–patient relationship and what factors may influence these interactions. Specifically, one should evaluate the role of a physician’s own biases, the role of patient-specific beliefs on communication, and the effect that these beliefs have on expectations and decision making.

In an attempt to discover potential biases that may exist among physicians, Oliver et al\(^29\) recently conducted an anonymous survey of general practitioners using the Racial Preference Implicit Association Test—a validated tool used among physicians that compares the average time it takes to categorize images of African Americans and Caucasians with good or bad words.\(^30\) They found that when given scenarios of patients of different races who may require a total knee arthroplasty (TKA), there was a strong preference of offering the surgery to White patients (\(P<.001\)). In addition, practitioners perceived African American patients as less “medically cooperative” (\(P<.0001\)). Although they found no association between race and recommendation for TKA (\(P=.44\)), they concluded that the bias of African American patients being less “medically cooperative” than Caucasians might influence treatment decisions.

Although difficult, some authors have attempted to evaluate the effect of different racial backgrounds on hospital-based communication. Hausmann et al\(^31\) evaluated interactions with patients at the Veteran Affairs (VA) Hospital using the Roter Interaction Analysis System (RIAS) in 402 patients. The RIAS is a validated and widely used coding tool used to assess physician–patient communication in which statements made may be classified into 42 categories that reflect emotional or biomedical communication.\(^32\) They found that, when compared with Caucasian patients, African Americans had conversations with more rapport-building statements (eg, social talk, compliments, or statements communicat- ing concern, reassurance, approval, agreement, empathy, and/or partnership) (beta, 7.84; 95% confidence interval [CI], 1.85 to 13.82), but there was less discussion of biomedical topics (eg, information giving,
questions, education, and counseling pertaining to the medical condition or treatment plan) (beta, -9.14; 95% CI, -16.73 to -1.54). However, they found no racial differences in other topics, such as physician verbal dominance, informed decision making, overall amount of dialogue, and length of visit.

The ideal physician–patient relationship has been described by the informed decision-making model, which places an emphasis on informing patients in an understandable manner while fostering their involvement in treatment decisions. This can be divided into 9 dimensions: discussing the nature of the decision, describing alternatives, describing benefits and risks, discussing uncertainty, assessing understanding, discussing the patient’s role, exploring patient context, assess desire for other’s input, and exploring patient preferences. Levinson et al evaluated the satisfaction rates and the incorporation of the IDM model with African American and Caucasian patients considering any major orthopedic procedure. They found that African Americans had substantially lower satisfaction rates than their Caucasian counterparts (93% vs 83%; P < .0001). However, they found no difference in the incorporation of the 2 main IDM elements, information-giving and fostering patient involvement (P > .05). Hence, the authors concluded that in addition to emphasizing IDM, culturally competent communication is imperative to closing this gap in satisfaction rates between different ethnic groups. The Institute of Medicine defines such communication as compassionate, empathetic, and responsive to “the need, values, and expressed preferences of the individual patient.”

A patient’s background, beliefs, and perceptions regarding TJA may also impact health care expectations and the decision-making process. For example, Ang et al evaluated the health beliefs regarding lower extremity TJA of 676 patients in a primary care practice. They used the arthritis-related health belief instrument, which assesses patient-perceived severity and susceptibility of arthritis to progress or worsening, as well as the perceived benefits and risks/ barriers of undergoing TJA. They found that African Americans perceived fewer benefits (P = .001) and greater risks (P = .0006) from undergoing TJA than Caucasians. However, neither health belief (P = .5) nor race (P = .1) was associated with being referred for TJA by the physician. Despite this, the authors concluded that it is critical to probe the beliefs, attitudes, and expectations of patients who are considering undergoing a TKA or a total hip arthroplasty (THA).

Similarly, Figaro et al investigated the beliefs of 94 African Americans living in Harlem, New York, who had primary knee osteoarthritis for a mean of 6 years. They found that only 36% of those interviewed believed that TKA would improve their knee pain and only 26% expected it to relieve their disability. In a cross-sectional survey of patients within the VA system (n = 596), Ibrahim et al found that African American patients were more likely than Caucasians patients to expect extreme difficulty walking (odds ratio [OR], 2.76; 95% CI, 1.83 to 4.16) and severe postoperative pain (OR, 2.61; 95% CI, 1.74 to 3.89) after adjusting for age, education level, annual household income, disease severity, and comorbidities. These pessimistic postoperative expectations may cause a delay in presentation among racial minorities, which could adversely affect outcomes.

Examining the physician–patient relationship involves an in-depth evaluation of perceptions and beliefs. Studies have shown that racial disparities may influence the communication, perceptions, and interactions between patients and physicians, as well as instigating bias in the health care setting. Ultimately, further studies are needed to aid in the elimination of disparities. Practitioners must be aware of the potential patient perceptions, beliefs, and attitudes that may affect care.

**USE**

Despite the much-reported success of TJAs, disparities still persist in their use between different ethnic groups. Many reports have shown that racial minorities undergo fewer TKAs and THAs than Caucasians. Recently, Singh et al assessed the differences in TKA and THA use between African American and Caucasian Medicare patients from 1991 to 2008. They found that African Americans underwent TKAs less frequently than their Caucasian counterparts (21 vs 32 arthroplasties per 10,000 people; P < .0001). However, they found no difference in the usage of THA between these races (P = .25). Similar disparities have been discovered within the VA health care system as well. Jones et al assessed disparities in TKA use among African Americans and Caucasian patients with osteoarthritis (n = 260,856) and found that African Americans were less likely to undergo TKA (OR, 0.72; 95% CI, 0.65 to 0.8). Several studies have evaluated whether confounding variables, such as geographic location and income, could explain these disparities. Skinner et al compared the use of TKA among different races in multiple localities between 1998 and 2000 (n = 430,726 arthroplasties). After adjusting for regional variation, they found that African American men were substantially less likely to undergo TKA than Hispanic and Caucasian men (18.4 vs 34.6 vs 48.2 per 10,000; P < .05).

Dunlop et al assessed the incidence of TKA and THA among African Americans, Hispanics, and Caucasians (n = 6,159 patients). After controlling for demographics, comorbidities, and economic status, they found that African Americans and Hispanics were using TKAs and THAs at markedly lower rates than Caucasians (OR, 0.46; 95% CI, 0.22 to 0.98). In a similar study controlling for the same confounding variables, Chen et
al\(^1\) found that African Americans were nearly half as likely to undergo a THA (\(P<.001\)) and 25% less likely to undergo a TKA than Caucasians (\(P<.001\)). Bang et al\(^1\) also evaluated the role of income on the trend of racial and economic disparities in the use of TJAs using the NIS database (n=149,959 TJAs). They found that Caucasians were more likely to undergo TJAs than African Americans (OR, 0.52; 95% CI, 0.46 to 0.59; \(P<.0001\)) and Hispanics (OR, 0.75; 95% CI, 0.61 to 0.91; \(P=0.004\)) in the same income and age brackets.\(^\text{14}\)

All of these studies concluded that economic, geographic, and overall health factors are unlikely to solely account for the lower use of arthroplasties among ethnic minorities. However, they failed to address the issue of disease burden in the different races.

In addition, some authors have analyzed the role of patient preference in these apparent use disparities.\(^{13,41}\) Hausmann et al\(^1\) assessed the effect of race on the recommendation and use of TKA and THA among African American (n=120 patients) and Caucasian patients (n=337 patients). Although they found that practitioners were approximately 50% less likely to recommend TKA or THA for African American patients than Caucasians of a similar age and disease severity (95% CI, 0.26 to 0.83; \(P=0.01\)), they noted no significant differences in the recommendation rate after adjusting for patient preference (OR, 0.69; 95% CI, 0.36 to 1.31; \(p = 0.25\)). When assessing the use of TJA, they noted that the incidence of African Americans undergoing surgery was approximately half that of the Caucasian cohort, but this did not achieve significance (95% CI, 0.21 to 1.54; \(P=0.27\)). Therefore, the authors concluded that patient preferences may play a vital role in and potentially explain racial disparities in arthroplasty use.\(^{13}\)

However, some studies have found no race-specific disparities in TJA use. Using data from the Health and Retirement Study (HRS), Dunlop et al\(^\text{15}\) evaluated the role of ethnic disparities in the use of any arthritis-related hip and/or knee surgery (n=16,713). After separating cohorts based on age (\(\geq 65\) years vs 51-64 years), they found that African Americans older than age 65 years had lower rates of hip and/or knee surgery compared with Caucasians (hazard ratio [HR], 0.38; 95% CI, 0.16 to 0.55). However, the younger cohort of African Americans had a similar incidence of surgery as their Caucasian counterparts (HR, 1.43; 95% CI, 0.87 to 2.38). In addition, there was no difference in the surgery rates between Hispanics and Caucasians in the younger (HR, 0.64, 95% CI, 0.12 to 1.44) or older cohorts (HR, 0.60, 0.32 to 1.10). They also found that African American and Hispanic patients were more likely to have a lower income (\(P<0.001\)), less than a 12th grade education (\(P<0.001\)), and receive health insurance through Medicaid (\(P<0.001\)) than were Caucasians. When examining the severity of their disease, they found that Hispanics and African Americans in

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### Table

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>No. of Patients</th>
<th>Race</th>
<th>Procedure</th>
<th>OR* (95% CI)</th>
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<tr>
<td>Singh et al(^8)</td>
<td>2014</td>
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<td>TKA</td>
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<td></td>
<td></td>
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<td>THA</td>
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<td>Skinner et al(^9)</td>
<td>2003</td>
<td>430,726</td>
<td>African American men</td>
<td>TKA</td>
<td>0.38</td>
<td>&lt;.05</td>
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<td></td>
<td></td>
<td></td>
<td>Hispanic men</td>
<td></td>
<td>0.72</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>African American women</td>
<td></td>
<td>0.81</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>0.9</td>
<td>&gt;.05</td>
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<td>Dunlop et al(^10)</td>
<td>2003</td>
<td>6159</td>
<td>African American</td>
<td>THA and TKA</td>
<td>0.46 (0.22 to 0.98)</td>
<td>-</td>
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<tr>
<td>Chen et al(^11)</td>
<td>2013</td>
<td>516,610</td>
<td>African American</td>
<td>TKA</td>
<td>0.76</td>
<td>&lt;.001</td>
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<td>0.57</td>
<td>&lt;.001</td>
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<tr>
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<td>0.66</td>
<td>.07</td>
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<tr>
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<td>THA</td>
<td>0.49</td>
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</tr>
<tr>
<td>Jones et al(^12)</td>
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<td>TKA</td>
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<td>THA and TKA</td>
<td>0.52 (0.46 to 0.59)</td>
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<tr>
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<td>Hispanic</td>
<td></td>
<td>0.75 (0.61 to 0.91)</td>
<td>.004</td>
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</tbody>
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*Abbreviations: CI, confidence interval; OR, odds ratio; THA, total hip arthroplasty; TKA, total knee arthroplasty.

*All ORs compared with Caucasians.*
both age cohorts were more likely to have arthritis-related limitations (P < .001). Therefore, they concluded that these disparities in use may be caused by factors that lead to inadequate medical access, such as socioeconomic status, lack of education, or source of health insurance.15

Disparities in race and its influence on patient preference may play a role in the use of TJA. There are many studies supporting the notion that these observed disparities may not be fully explained by confounding variables, such as income, age, or comorbidities. However, studies support the notion of access to quality care being a confounding variable.

**COMPLICATIONS**

**Intraoperative Complications**

Few studies have assessed the role of race and ethnicity on the incidence of intraoperative complications. Menendez and Ring16 analyzed the perioperative risks of different racial groups following any major elective orthopedic procedure, as identified by the NIS, the largest all-payer inpatient database in the country containing discharge records from over 1,000 hospitals (n=3.5 million patients). They found that Hispanics were less likely than Caucasians to receive a blood transfusion during a THA (OR, 0.75; 95% CI, 0.69 to 0.82; P < .001) or a TKA (OR, 0.71; 95% CI, 0.67 to 0.75). Similarly, African Americans were also less likely than Caucasians to receive a blood transfusion while undergoing a THA (OR, 0.78; 95% CI, 0.74 to 0.83; P < .001); however, there were no differences found for those undergoing a TKA (OR, 0.97; 95% CI, 0.93 to 1.00).16

Conversely, Qian et al17 evaluated disparities in blood transfusion during THA using a database from a single institution (n=42,933 patients) and found that African Americans were more likely to receive a blood transfusion than Caucasians, after controlling for patient insurance and type of hospital (OR, 1.43; 95% CI, 1.29 to 1.58; P < .001). One critical limitation complicating the findings of both of these studies is that they did not control for patient religion, which if the patient was a Jehovah’s Witness, would greatly impact decisions regarding blood transfusions.

Another intraoperative complication that has been evaluated is arterial injury. Abularrage et al18 evaluated the risk of arterial injury in patients in the VA health care system (n=37,523 primary and 4110 revision arthroplasties) and found that African Americans were more than twice as likely than Caucasians to experience an arterial injury during TKA or THA (OR, 2.5; 95% CI, 1.2 to 5.3; P = .02). Given the paucity of reports on complications, as well as the lack of studies evaluating the effect of confounding preoperative comorbidities, further evaluation is needed to deduce whether racial disparities truly influence intraoperative complication rates.

**Ninety-Day Postoperative Complications and Readmission Rates**

Racial and ethnic disparities in readmission rates have been reported in multiple large studies. Using the NSQIP database, a multi-institution database that contains patient information and 30-day postoperative complications, Pugely et al19 noted that African American race was associated with a higher 30-day complication rate (OR, 1.68; 95% CI, 1.35 to 2.09; P < .0001). In addition, Girotti et al20 evaluated the rate of readmission following THA (n=299,023 arthroplasties) and, using a multivariate analysis adjusted for comorbidities and socioeconomic status, found that African Americans were more likely to be readmitted than Caucasian patients (10% vs 9%; P < .001). Singh et al8 also found a substantial increase in 30-day readmission rates among African Americans, increasing from 6% in 1991 to 24% in 2008 (P < .05). Similarly, in a study using the Medicare database, Mahomed et al22 found that African Americans who underwent TKA had higher rates of mortality (relative risk [RR], 1.4; 95% CI, 1.0 to 1.8), deep wound infections (RR, 1.5; 95% CI, 1.0 to 2.1), and manipulations under anesthesia (RR, 1.4; 95% CI, 1.2 to 1.7) than Caucasians. When these authors examined THA patients (n=61,568 patients), they found higher 90-day mortality rates among African Americans compared with Caucasians (OR, 1.48; 95% CI, 1.03 to 2.11).21 However, they found no differences in the incidence of 90-day readmission, pulmonary embolism, instability, or infection following THA.21

Within the VA Hospital system, disparities have been reported as well. Ibrahim et al23 assessed postoperative complications among different ethnic groups following lower extremity TJA over a 5-year period (n=12,108 TKAs and 6703 THAs). Following TKA, African Americans were more likely than Caucasians to experience both noninfection-related (OR, 1.5; 95% CI, 1.08 to 2.1; P = .02) and infection-related complications (OR, 1.42; 95% CI, 1.06 to 1.9; P = .02). In addition, Hispanics were more likely to have infection-related complications following TKA than Caucasians (OR, 1.64; 95% CI, 1.08 to 2.49; P ≤ .02). However, when evaluating the THA cohorts, there were no differences in infection-related (P ≥ .56) or noninfection-related complications (P ≥ .16) among African Americans and Caucasians. Furthermore, there were no racial differences in mortality rates following either THA or TKA (P > .4).23 However, Weaver et al24 found a much lower mortality rate in Caucasian patients when compared to African Americans following TKA (OR, 0.79; 95% CI, 0.66 to 0.94) (n=18,586). Thus, there appears to be a clear disparity in a variety of postoperative complications that may result in marked morbidity and/or mortality.

**Role of Hospital Source in Complications**

The differences observed in complication rates may be attributed to the quality of hospitals at which the TJAs are performed. Cai et al44 evaluated the incidence of patients undergoing TKA (n=610,285
patients) at lower quality hospitals, defined as those with a higher risk-adjusted mortality and complication rate (>80th percentile mortality and complication incidence among other hospitals). They noted that African Americans were more likely to undergo TKA at these hospitals than Caucasians (OR, 1.28; 95% CI, 1.18 to 1.41; P<0.0001).

Similarly, SooHoo et al evaluated THA patient populations at different institutions using a state-wide database (n=138,999). They found that compared to Caucasians, African Americans (RR, 1.78; 95% CI, 1.08 to 2.92; P=0.23), Hispanics (RR, 3.52; 95% CI, 2.61 to 4.74; P<0.001), and Asians (RR, 1.77; 95% CI, 1.00 to 3.12; P=0.048) were more likely to undergo a THA at low-volume institutions. Similarly, when assessing TKA patients (n=222,684 patients) in another study, the authors also found that compared to Caucasians, more African Americans (RR, 1.73; 95% CI, 1.09 to 2.76; P=0.02), Hispanics (RR, 3.13; 95% CI, 2.31 to 4.23; P<0.001), and Asians (RR, 2.95; 95% CI, 1.89 to 4.62; P<0.001) were being treated at these low-volume institutions. Therefore, the authors concluded that the location where the TJA is performed might play a role in racial disparities.

Several large studies have shown differences in complications and hospital readmissions between ethnic groups. Although this may be related to the quality of the hospital where the procedure was performed, other causative factors remain undetermined and further studies are needed to evaluate potential reasons for these disparities.

**Patient-Reported Outcomes**

Although there are few studies that evaluate the differences in postoperative outcomes between ethnic groups, there are some studies that have noted better results in Caucasians. Lavermia et al assessed the outcomes of both THA and TKA among African Americans (n=49 patients) and Caucasians (n=282 patients). At a mean follow-up of 5 years (range, 3 to 8 years), the authors found that Caucasians had significantly better Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores (44 vs 35 points; P<0.0001). Similarly, a large, retrospective study by Lavermia et al evaluated the role of race and ethnicity in patient-reported functional outcomes following TJA (n=1749 patients). After a mean follow-up of approximately 5 years (range, 2 to 16 years), they found that African American and Hispanic patients were associated with worse postoperative outcomes, as measured by the Quality of Well-Being (P<0.001), Short Form (SF)-36 physical component (P=0.02), WOMAC function (P<0.001), WOMAC pain (P<0.001), and WOMAC stiffness (P<0.001) scores.

More specifically, Kamath et al assessed potential disparities in outcomes following TKA at 1 institution (n=185 knees). After a mean 29-month follow-up (range, 24 to 60.3 months), they found that African American men had worse Knee Society Scores than Caucasian counterparts after controlling for age, body mass index, Charlson Comorbidity Index, and a diagnosis of diabetes (86.8 vs 92.7 points; P=0.001). However, they did notice a marked difference in delay in presentation between African American and Caucasian male patients (30 vs 20 months; P=0.1, as well as female patients (37 vs 15 months; P=0.1). The authors postulated that this delay in treatment from the initial symptom onset may explain the discrepancy in outcomes between the cohorts.

When examining range of motion, racial disparities have been reported. In a multicenter, retrospective, case-control study that evaluated patient-reported range of motion, Springer et al noted that African Americans were twice as likely to undergo manipulation under anesthesia when compared to Caucasians (OR, 2.13; 95% CI, 1.46 to 3.11; P<0.0001) (n=521 manipulations). Similarly, in a separate study, Issa et al evaluated various factors may increase the risk for postoperative arthrofibrosis (n=156 knee manipulations). They found that non-White race was associated with double the risk of requiring a manipulation under anesthesia (OR, 2.01; 95% CI, 1.06 to 3.84; P=0.0336). Although both of these studies could not offer a clear etiology of postoperative stiffness, they concluded there is a disparity among those who suffer from arthrofibrosis following TKA.

**DISCUSSION**

Race-specific studies have not been extensively conducted on patient-reported outcomes. However, a few studies have reported that racial disparities may be prevalent in patient-reported outcome metrics.

Racial disparities exist in the use and outcomes of lower extremity TJA, which may not always be accounted for by confounding factors, such as socioeconomic status, geographic location, age, and comorbidities. However, patient preference and lack of health care access may explain some of the observed disparities in TJA use. In addition, the quality of the hospital where care is received may play a role in these disparities, particularly with postoperative complications.

Given these apparent disparities, it is the professional and ethical obligation of practitioners to try to formulate solutions that will ultimately lead to their elimination. Going forward, the education of practitioners and the subsequent education of their patients will be critical. The content should be geared toward acknowledging their own biases about their patients while using the principles of informed decision making to probe patients’ attitudes, beliefs, and biases. Over the past 10 years, the AAOS has made a concerted effort to provide resources in the form of seminars and instructional course lectures that practitioners may use as a guide for communication strategies with racial minorities. The physician–patient interaction is particularly important for patients who express a lack of preference for or negative attitudes regarding joint arthroplasty.
The current authors are not advocating to raise the level of patient preference for non-Caucasian patients because they believe that all patients’ preferences should be addressed equally, regardless of race. However, they do believe that practitioners should be aware that there may be race-specific differences in understandings, fears, and beliefs and thus educate the patient about the procedure with these in mind. By doing so, the practitioner may assuage patients’ concerns that potentially lead to racial disparities in TJA use. Furthermore, it is the professional and ethical obligation of practitioners to educate their patients in an understandable way regarding the risks, benefits, and alternatives of lower extremity TJA. In postoperative care, risk stratification may be helpful in preventing complications.

However, there have been difficulties in the attempts to analyze and elucidate where disparities may exist. For example, in each study that was selected for this review, no indication was made as to the ethnicity of the practitioner. It is difficult to evaluate all racial and ethnic groups because diversity in the United States continues to increase. Furthermore, there is a paucity of studies assessing the racial differences in patient-reported functional outcomes and implant survivorship, and future studies should elucidate any disparities that may exist in these outcome metrics while controlling for a multitude of patient-related confounding variables. These complex questions may be answered first by ensuring there are large database studies evaluating the prevalence of arthritis in different ethnicities.

In addition, the continued growth of the American Joint Replacement Registry will be helpful in determining whether there is a difference in the use of lower extremity TJA among racial groups. The larger the registry becomes, the more it is possible to control for the myriad confounders encountered in such studies. Furthermore, on a single and multi-institutional level, large prospective studies will be required that compare postoperative outcomes, survivorship, and complication rates among different ethnic groups.

REFERENCES

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REFERENCES


