

Breakout Session: Ethnic and Racial Disparities in Joint Arthroplasty

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Abstract

Background Many authors report racial and ethnic disparities in total joint arthroplasty. The extent and implications, however, are not fully understood.

Questions/purposes Our purposes in this breakout session were to (1) define “Where are we now?”; (2) outline “Where do we need to go?”; and (3) generate a plan for “How do we get there?” in addressing issues of racial disparity and total joint arthroplasty.

Where are we now? Blacks and some other ethnic minorities have a greater incidence of arthritis and chronic disability than the population in general. Blacks have a lower use of total joint arthroplasty for a variety of reasons, including patient trust, perceived limited satisfaction with results by peers, varying knowledge about total joint arthroplasty, and concerns about pain associated with these procedures. Current data, however, are insufficient to clearly define the magnitude and nature of musculoskeletal disparities.

Where do we need to go? We need to better define the magnitude and nature of racial disparities to best design and implement research questions and studies and target areas for improvement. We should define geographic and provider variation that lead to the differences in use that has been observed in total joint arthroplasty.

How do we get there? A profession-wide emphasis and focus on disparities needs to be developed with other medical specialties and national organizations to advocate for changes to better define and address racial disparities. Partnerships with organizations and/or investigators that can gain access to relevant databases should be encouraged. Special attention to disparities and manuscript reviewing and editing is essential.

Introduction

Since the 1985 Report of the Secretary of Health and Human Services, there has been an increasing awareness of the existence of disparities in health care that are seemingly associated with, related to, or consistent with certain racial and ethnic groups identified within the US population [13]. These health disparities were initially defined around the incidence and treatment of diseases such as diabetes, hypertension, colorectal cancer, end-stage renal disease, and HIV/AIDS. However, since 2002, several studies have shown chronic diseases such as musculoskeletal disease and arthritis account for health disparities as well [8, 18].

We have some evidence, from surgeons with large surgical practices in a multicultural environment, that despite the same surgical technique, outcomes for total joint arthroplasty are generally worse for blacks [19, 23]. Low preoperative physical function, poor patient education status regarding the planned procedure, and delay in the performance of the surgery can affect the outcome of total joint arthroplasty for all patients, but it is unclear if this explains the inferior outcomes for minority patients [20, 21]. Therefore, the reasons for disparate use and inferior outcomes with hip and knee arthroplasty with certain

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minority populations are not clear, but they certainly deserve further clarification and research.

An overview of racial and ethnic health disparities suggest several causes for these disparities. They can be organized into patient-related, provider-related, and system-related causes [29].

Where Are We Now?

Total joint arthroplasty is one of the most successful and cost-effective interventions to relieve patients of the burden of chronic disease and disability by alleviating pain and restoring mobility for an overwhelming majority of those patients who have undergone the procedure [22].

For the past 15 years, racial and ethnic disparities in total joint arthroplasty have been reported by several sources and authors [8, 22–24, 26]. Skinner et al. reported that the annual rate of knee arthroplasty was higher for non-Hispanic white women than for Hispanic women and black women. The rate of non-Hispanic white men who had arthroplasty of the knee was more than double the rate of black men. When geographic differences in these groups were adjusted for, there was still much lower use among black men [26].

From the years 2000–2006, the incidence of TKA in the United States for all patients increased by 68%, yet during the same period, the incidence of total joint arthroplasties in blacks was 39% less than in whites [5]. In addition, the data themselves are disparate at this point, making defining the nature and magnitude of disparities difficult. Disparities exist at all aspects of disease presentation and treatment and they are related to patient factors, physician factors, societal factors, and cultural factors (Table 1).

Patient-related Factors

Black and Hispanic patients often wait longer than their white counterparts of similar age to proceed with total joint arthroplasty. There are many reasons for this disparity,

some of which are discussed in this article. This delay is a possible reason for poorer outcomes in blacks who undergo total joint arthroplasty. A recent study suggests blacks and Hispanics had more illnesses and more difficulties with physical functioning than whites, including hypertension, diabetes, and obesity. More blacks than whites reported difficulty with each of the four indicators of physical health function [10]. There are reportedly major differences among patients of color in the United States with regard to knowledge, beliefs, and attitudes as they relate to total joint arthroplasty and the perceived benefits of the procedure [2]. Furthermore, Veterans Affairs (VA)-based studies have demonstrated that even men in a controlled environment such as the VA Hospital System have disparate use of total joint arthroplasty. The reasons for this are multifactorial, but one study suggests patient preference and customs impacted the decision to proceed with or reject total joint arthroplasty when it is recommended to the patient [14]. However, studies performed within VA institutions regarding total joint arthroplasty preferences may be influenced by the general demographics of the VA population, which is predominantly male with lower income status and lower education level achievement when compared with the US population as a whole, and the results may not be directly applicable to patient populations outside the VA system [25].

The lack of understanding by patients of the risks and benefits of total joint arthroplasty appear to be more prevalent in the underrepresented minority community. Health literacy is a widespread problem that removes the impact and effectiveness of even the most successful healthcare interventions such as hip and knee arthroplasty [30].

It has been suggested that ethnic minority patients are less likely to even consider TKA as a result of differences in perception of benefit, lack of personal experience with the procedure, and lack of trust [28]. There remains the concern among certain blacks that relatively new elective surgical procedures are experimental and they wish to avoid being a victim of these experiments. Many years after the acknowledgement of the Tuskegee Syphilis Study, there remains much skepticism regarding total joint arthroplasty in many communities. Another variation in patient preference was derived from a survey that analyzed willingness to pay among blacks when compared with whites in the decision to use elective procedures such as TKA, which found the amount patients were willing to pay for these services was much lower in blacks, which creates a disparity in available health services use [4]. The socioeconomic status of the patient and the family may also play a role in the use of surgical solutions creating further disparities related to race and income [3].

Patient attitudes and preferences are expressed in many different ways that all lead to a lower use of total joint

Table 1. Root causes of racial and ethnic health disparities

Patient-related	Provider-related	System-related
Health status	Access	Access
Education	Bias (surgeon-related and nonsurgeon-related)	Insurance coverage
Health literacy	Cultural competency	Demographics
(Place)Knowledge, attitude, bias	Quality	
Outcomes		

arthroplasty by black and Hispanic patients. Some patients have strong attitudes of caution and lack of confidence toward any major surgery [6, 12, 16]. Many minority patients are more willing to use complimentary and traditional care modalities that do not include surgery for their arthritis and pain management [15]. Other patients are simply unable to process and accept the uncertainty of risks and benefits from surgery and, consequently, avoid it [7].

Finally, many patients have strong religious beliefs and traditions that will not allow them to consider major surgery as an alternative for their joint pain management [1, 25]. All of these patient-related factors may impact the use of joint arthroplasty by different communities.

Provider-related Differences

In the United States, small area variations, in which the rate of a procedure varies substantially across small geographic areas as a result of the number of available providers and provider variation in care, have been observed in total joint arthroplasty [9]. The availability in most communities in America of black and Hispanic orthopaedic surgeons and particularly those who specialize in total joint arthroplasty is a key factor that limits an increase in the number of total joint arthroplasties performed in black and Hispanic patients. Provider credibility is increased with patients who share their ethnicity.

There is a need to examine whether orthopaedic surgeons are less likely to recommend total joint arthroplasty to black patients compared with white patients with similar clinical indications and whether there are racial differences in the willingness to undergo total joint arthroplasty, which may partially account for the small area variation seen with hip and knee arthroplasty.

Surgeon experience and skill and the location in which the surgery was performed may play a role in the outcomes as well. Concern about optimal outcomes in high-risk patients may negatively influence the desire of some surgeons to offer total joint arthroplasty as an alternative to populations with more comorbidities [19]. These factors could contribute to the inferior outcomes seen in some minority populations.

Patient and provider factors can also exert a combined effect on the outcome and patient use of hip and knee arthroplasty. The understanding of patient preferences and their importance in the use of total joint arthroplasty has been emphasized in the recent literature [17]. Many sociodemographic and clinical variables were examined by Hausmann et al., and the authors concluded patient preferences had the most substantial impact on the recommendations patients received from orthopaedic surgeons, which in turn largely determined whether patients

underwent total joint arthroplasty [11]. These factors could also influence how far along in the disease process patients are before accepting surgery, which can negatively impact their ultimate outcome.

System-related Differences

Racial and ethnic disparities in rates of total joint arthroplasty have been studied in the United States for more than a decade. There have been parallel studies of these disparities internationally. For example, individuals born in Italy and Greece had a lower rate of primary total joint arthroplasty when they had migrated to Australia in comparison with Australian-born people [31]. In that study, the incidence rate of primary joint arthroplasty for osteoarthritis in participants born in Italy or Greece was reduced, even when adjusted for age, gender, body mass index, and education. It was believed that access to care may be a factor, but social factors including insurance available for private hospital care, health beliefs and preferences for treatment, and language barriers for the migrant participants in the study also played an important role.

The challenges of the healthcare system may affect the use of total joint arthroplasty by minority populations in the United States as well. A study that adjusted for a large number of financial factors, including income and specific insurance status, concluded the disparity in TKA use, especially for minority men, remains striking [2]. Lower use of TKA among blacks and Hispanics may be associated with insurance coverage limitations and nonaffordable out-of-pocket costs [2, 27]. All of these system factors may impact use rates for minority populations.

Where Do We Need to Go?

To eliminate racial and ethnic disparities in total joint arthroplasty, many recommendations have been advanced. It is imperative that we need to better define racial and ethnic disparities in terms of origin and magnitude to best design and implement research questions. The burden of disease as it relates to arthritis of the hip and knee across ethnic groups needs to be characterized.

The ultimate goal should be to achieve “total joint equity” in the United States and we must develop interventions to arrive at that point and as a result, surgical indications need to be more accurately characterized and defined. As part of this process, we need to demonstrate opportunities to eliminate disparate care and, in so doing, improve the quality of care that has been affected in the past: (1) improve the general health and lifestyle for underrepresented minorities; (2) must meet the challenge

of improving the outcomes for those racial and ethnic minorities who have or will undergo total joint arthroplasty; (3) black patients need better preoperative preparation for surgery to ensure better results; and (4) we should redefine “quality of care” in the context of racial and ethnic musculoskeletal disparities.

We must more clearly define musculoskeletal health disparities through enlightened research: (1) produce better data and statistics; (2) identify sources of study (databases) that may be explored as sources of information for the current status; and (3) use the analysis of statistics obtained to provide solutions and the “prescription” “to total joint equity.

It is expected that the results of this new research would demonstrate that the overall quality of care is improved when disparate care is eliminated.

Finally, increasing the number of minority total joint arthroplasty surgeons is essential and should be a constant goal since patient-provider trust and culturally sensitive care will be enhanced.

How Do We Get There?

We must collaborate with other specialties across medicine to advocate for changes that will better define and address racial disparities and identify organizations and/or investigators that can assist in gaining access to available databases in a secure manner such as insurance claim databases so this valuable source of information can be used to help define current disparities of care.

Racial- and ethnic-controlled studies should be encouraged in the literature by planning for this in study design and requiring this in journal manuscript reviewing and editing before publication.

We must engage national organizations and industry to advocate for culturally competent education and advertising around joint arthroplasty. This includes television, Internet, and other industry marketing initiatives as well as patient brochures and educational materials used in the office.

We must improve education efforts of surgeons and other members of the orthopaedic care team as well as of referring primary care physicians about the current status of disparate care in joint arthroplasty and cultivate cultural sources such as community organizations and religious organizations to assist with educational efforts.

Programs in health literacy must be developed more completely for total joint arthroplasty.

The perception of value for the health intervention such as total joint arthroplasty must be improved for blacks and other minority populations.

We must provide public assistance to lower the out-of-pocket burden and costs for the underinsured minority patient (Hispanic or black).

Racial and ethnic disparities in joint arthroplasty exist today and have been recognized for more than a decade. The disparities present at many levels, including many aspects of disease presentation and treatment. These disparities are related to patient factors, provider factors, and societal and cultural factors. The solutions for these persistent disparities will need to include a strategy targeted to all of these areas and their interplay with each other. Research designed to understand and eliminate the barriers to achieving “total joint equity” should become a key goal of our profession going forward.

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