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Perspectives of Orthopedic Surgeons on Racial/Ethnic Disparities in Care

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Abstract
Objectives Racial/ethnic disparities in healthcare, including orthopedics, have been extensively documented. However, the level of knowledge among orthopedic surgeons regarding racial/ethnic disparities is unknown. The purpose of this study is to determine the views of orthopedic surgeons on (1) the extent of racial/ethnic disparities in orthopedic care, (2) patient and system factors that may contribute, and (3) the potential role of orthopedic surgeons in the reduction of disparities.
Methods Three hundred five members of the American Orthopaedic Association completed a survey to assess their knowledge of racial/ethnic disparities and their perceptions about the underlying causes.
Results Twelve percent of respondents believe that patients often receive different care based on race/ethnicity in healthcare in general, while 9 % believe that differences exist in orthopedic care in general, 3 % believe that differences exist within their hospitals/clinics, and 1 % reported differences in their own practices. Despite this, 68 % acknowledge that there is evidence of disparities in orthopedic care. Fifty-one percent believe that a lack of insurance significantly contributes to disparities. Thirty-five percent believe that diversification of the orthopedic workforce would be a "very effective" strategy in addressing disparities, while 25 % percent believe that research would be "very effective" and 24 % believe that surgeon education would be "very effective."
Conclusion Awareness regarding racial/ethnic disparities in musculoskeletal care is low among orthopedic surgeons. Additionally, respondents were more likely to acknowledge disparities within the practices of others than their own. Increased diversity, research, and education may help improve knowledge of this problem.

Keywords Racial disparities · Orthopedic surgery

Introduction

Racial and ethnic disparities in healthcare have been extensively documented in the literature. A seminal report by the Institute of Medicine entitled "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care" helped bring this issue to the forefront over a decade ago, and it has remained a major national public health initiative ever since [1, 2]. Although much of the evidence on racial and ethnic disparities is related to cardiovascular care, disparities have also been demonstrated in musculoskeletal care. Minorities have been shown to have lower utilization rates of total joint arthroplasty, more complications following joint replacement, higher rates of readmission after orthopedic procedures, lower rates of screening and treatment for osteoporosis, and increased morbidity and mortality following hip fracture [3–14].

Although the reasons behind racial and ethnic disparities are often multifactorial, there is some evidence that providers contribute, at least in part, to these inequities. Particularly in the area of cardiovascular care, physician decision-making has been linked to racial differences in treatment [15, 16]. A key

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part of developing strategies to address this problem at the provider level is the assessment of current knowledge, beliefs, and attitudes regarding racial and ethnic disparities. This has been done among cardiac care specialists, where surveys of cardiologists and cardiovascular surgeons have demonstrated a lack of awareness of racial disparities, particularly in the assessment of their own practices [17, 18].

Traditionally, strategies addressing racial disparities in orthopedics have focused on cultural competency and diversification of the physician workforce [19]. However, any lack of knowledge, insight, and/or interest among orthopedic surgeons regarding racial disparities in musculoskeletal care, and the role that surgeons potentially play in these disparities, may be barriers to such provider-focused interventions. On the contrary, any insight that current practicing orthopedic surgeons may offer on differences in care may help contribute to potential solutions. Therefore, the purpose of this study is to determine the views of orthopedic surgeons and surgeons-in-training on (1) the extent of racial/ethnic disparities in musculoskeletal health and orthopedic surgery outcomes, (2) patient and system factors that may contribute to racial/ethnic disparities, and (3) the potential role of orthopedic surgeons in the reduction of racial/ethnic disparities.

Methods

A survey was developed, partly based on a survey used in the aforementioned study performed among cardiologists [17]. The draft survey was reviewed by two external survey consultants and the American Orthopaedic Association (AOA) Survey Review Taskforce. It included questions about the following: the extent to which orthopedic surgeons think that race/ethnicity (relative to other nonclinical factors) impacts care, the extent to which respondents think that racial/ethnic disparities exist in orthopedic care, surgeon perceptions on the strength of evidence for the presence of racial/ethnic disparities in orthopedic care, the extent to which they believe racial/ethnic disparities exist in the prevalence and treatment of knee osteoarthritis, surgeon perceptions about various patient and system factors that may contribute to racial/ethnic disparities in orthopedic care, surgeon opinions on the importance of addressing racial/ethnic disparities, surgeon perceptions on effective strategies to address racial/ethnic disparities, and surgeon demographic information.

With Institutional Review Board approval, the final survey was distributed to all members of the AOA, including the Emerging Leaders Program (ELP) and the Council of Orthopaedic Residency Directors (CORD). In total, 2074 individuals were invited to participate via e-mail. Up to three reminder e-mails were sent to those who did not access the survey through the link in the e-mail. Of the 2074 individuals invited, 33 had e-mail addresses which were no longer working. Therefore, the final sample was 2041. Of these eligible members, 695 individuals opened the e-mail invitation and 305 (15 %) completed the survey online. Response frequencies were calculated for each response item.

Results

The majority of respondents were practicing orthopedic surgeons (93 %). Five percent of respondents were residents or fellows. The majority of respondents were white (78 %) and male (88 %). Twenty-six percent of respondents reported serving in leadership roles at their institutions, including residency program director (14.8 %), academic department chairperson (6.6 %), and nonacademic department chairperson (4.6 %). Forty-six percent of respondents reported caring for patient populations in which one quarter or less of the patients were minorities. Full demographic information is listed in Table 1.

Twelve percent of respondents agreed that clinically similar patients "often" receive different care on the basis of race/ethnicity in the US healthcare system in general, while 9 % agreed that differences "often" exist in orthopedic care in general, 3 % agreed that differences "often" exist within their hospitals/clinics, and 1 % reported that differences "often" exist in their own practices. Conversely, 8 % of respondents believe that clinically similar patients "never" receive different care on the basis of race/ethnicity in the healthcare system in general. Twelve percent believe that differences never exist in orthopedic care in general, 35 % believe that differences never exist in orthopedic care at their institution, and 58 % believe that differences never exist in their own practices (Fig. 1).

The majority of respondents (68 %) acknowledge that there is at least some evidence of disparities in orthopedic care. Fifty-one percent of respondents believed that a lack of insurance "significantly" contributes to disparities, 32 % believe that a higher burden of comorbidities "significantly" contributes, and 31 % believe that insurance type "significantly" contributes (Fig. 2).

Eighty-three percent of respondents believe that racial/ethnic disparities in orthopedic care are important to address. Thirty-five percent believe that diversification of the orthopedic workforce would be a "very effective" strategy in addressing disparities, while 25 % believe that research would be "very effective," and 24 % believe that surgeon education about disparities would be "very effective" (Fig. 3).

Discussion

The major finding of this study is that awareness regarding racial and ethnic disparities in musculoskeletal care is low among orthopedic surgeons and residents. Many respondents

Table 1 Demographic and practice characteristics of respondents ($N = 305$)

	Percent
Practice status	
Resident	1.6
Fellow	3.3
Practicing orthopedic surgeon	93.5
Retired orthopedic surgeon	1.6
Sex	
Male	88.2
Female	10.8
Preferred not to answer	1.0
Race/ethnicity	
White	78.0
Asian	9.5
African American	4.9
Hispanic/Latino	1.6
Other	3.6
Prefer not to answer	2.3
Geographic location	
Northeast	27.4
Midwest	22.3
South	31.8
West	18.5
Year of residency completion[a]	
Before 1985	27.0
Between 1985 and 1999	34.0
2000 or later	39.0
Leadership roles	
Academic chairperson	6.6
Nonacademic chairperson	4.6
Residency program director	14.8
Patient population characteristics	
Fewer than 10 % minorities	13.8
Between 10 and 25 % minorities	33.1
Between 25 and 50 % minorities	36.7
Between 50 and 75 % minorities	14.4
Greater than 75 % minorities	2.0

[a] Of those who have completed residency, only 300 provided a year of residency completion

do not believe that racial disparities exist, even in healthcare in general, despite the ample evidence to the contrary. Acknowledgment of disparities decreased when the respondents were asked to consider orthopedic care and further decreased as the respondents were asked to consider their own institutions and individual practices.

This finding resembles those in similar studies performed in cardiologists, cardiovascular surgeons, and psychiatrists [17, 18, 20]. Of 344 cardiologists surveyed, 33 % agreed that disparities existed in cardiovascular care, 12 % felt that

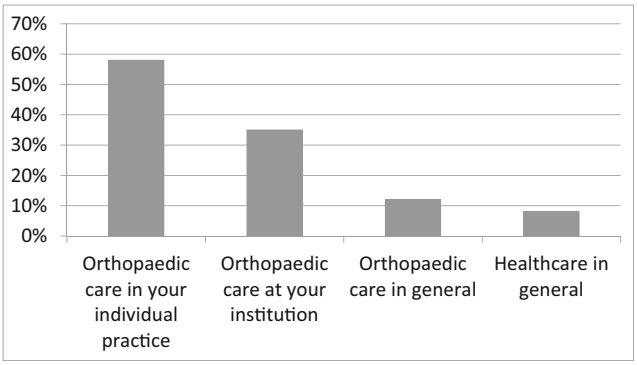

Fig. 1 Percentage of respondents who believe that clinically similar patients never receive different care based on race/ethnicity

disparities existed at their institutions, and 5 % felt that disparities existed within their own practices [17]. Likewise, among 204 cardiovascular surgeons surveyed, 30 % felt that racial disparities existed in the use of therapeutic tests and procedures and just 2 % felt that these disparities existed in their own practices [18]. Similar results have also been demonstrated among psychiatrists regarding disparities in mental healthcare, where a surveyed group of physicians were more likely to acknowledge disparities in psychiatric care outside of their own practices [20].

There are some potential explanations for our results. It is possible that respondents do not provide care to enough minority patients to have an opportunity to see racial disparities in their own institutions and practices. Although only 14 % report having practices of less than 10 % minority patients, surgeons are not typically involved in the referral process and may not be aware of whether minority patients are referred less often for the utilization of orthopedic services. Furthermore, complications from orthopedic procedures are relatively uncommon occurrences, which may make the identification of racial disparities within one's own practice difficult. Another potential explanation is that it may simply be

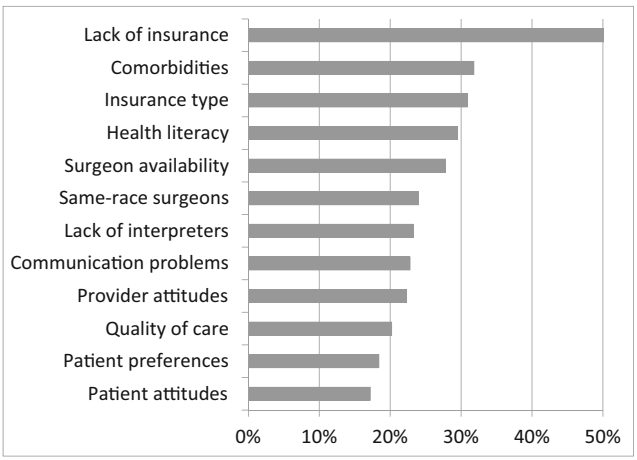

Fig. 2 Among respondents agreeing that racial/ethnic disparities exist in orthopedic care, the percentage of respondents who believe that specific patient and system factors contribute significantly to these disparities

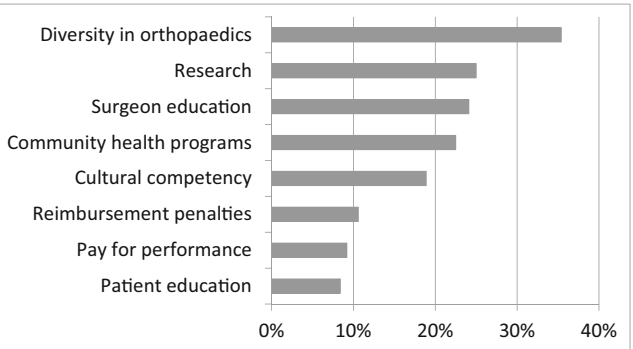

Fig. 3 Among respondents agreeing that it is important to examine and/or address racial/ethnic disparities in orthopedic care, the percentage of respondents who believe that specific strategies would be significantly effective

difficult for respondents to report racial disparities within their chosen field, institutions, and individual practices. Both explicit and implicit biases have been demonstrated among physicians and are often thought to contribute to racial disparities [21–23]. These traits are generally considered to be undesirable; therefore, the surgeons we surveyed may not want to associate themselves with such qualities.

Another interesting finding is the significant number of respondents who believe that lack of insurance is a major contributor to disparities in care. Although there are higher rates of uninsured in minority populations, leading to lack of access to care and lower overall health status [24, 25], disparities have been demonstrated within insured populations [1]. Much of the data on disparities in joint replacement have come from large single-payer databases, such as Medicare, VA, and Kaiser Permanente [6, 8, 9, 26]. In these studies, race has been shown to be an independent risk factor for low utilization or complications following total joint replacement within a group of patients who all have the same insurance type. Perhaps if respondents believe that insurance is the primary driver for disparities, they may believe race is not an independent risk factor for inequities in care and outcome. This could explain the low number of respondents who believe that differences in care exist which are based on race/ethnicity.

A major limitation of this study is the low response rate. The combination of a sensitive subject and a target audience which is difficult to reach likely contributes. In general, the response rates for Web-based surveys are low, relative to other methods [27, 28]. Such surveys may be easy for a busy group of orthopedic surgeons to decline, in favor of other obligations [29]. The topic of the survey may have also contributed to a lower response rate. Race is a topic that has gone relatively unaddressed in healthcare, as it is a difficult topic to discuss openly for many people. We attempted to conceal the racial component of the study topic from potential respondents by using a relatively nonspecific invitation which did not mention race—the survey invitation was entitled "Perspectives of Orthopedic Surgeons on Disparities in Care" and it asked individuals to participate in a study designed to "assess the knowledge and beliefs that orthopedic surgeons have regarding disparities in musculoskeletal care." However, once the survey is accessed, the content is clearly about race, which may have led some respondents to abort the survey. This is further evidenced by the fact that less than 50 % of those who accessed the survey actually completed it. Due to the low response rate, there may be a high rate of nonresponse bias. It was difficult to determine whether those that responded are different than those who did not due to the lack of demographic data available for those who did not respond. Thus, it is difficult to determine what type of impact this response rate may have had on our results.

Another potential limitation may be the population we elected to survey. The AOA is an organization composed of leaders in orthopedic surgery, who must be nominated for membership [30]. As a result, its members may not be representative of the average orthopedic surgeon. However, we elected to survey this group because we wanted to understand the perspectives of leaders in the field, who have a major influence on others in orthopedics. This study's finding of lack of knowledge of disparities among members of the AOA may suggest that the general population of orthopedic surgeons is also relatively unaware of this problem.

Finally, the lack of consensus on how often disparities occur in orthopedics is another major limitation. Although numerous studies have demonstrated differences in orthopedic care based on race/ethnicity, there is no agreement on whether these disparities occur "often," "sometimes," or "seldom." However, there is sufficient evidence to say that "never" is not an accurate response. This specific finding was presented in the "Results" section for this reason. The relatively high number of respondents who believe that there are "never" racial differences in healthcare or orthopedic care at any level still supports our conclusion.

Despite these limitations, this study suggests a low level of awareness regarding racial/ethnic disparities among orthopedic surgeons. Educational efforts are needed to improve knowledge of this problem, which may, in turn, increase its recognition among orthopedic surgeons within their own practice settings. Furthermore, focused research may help identify potential contributors to racial/ethnic disparities in orthopedic care and may ultimately lead to their resolution.

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Compliance with Ethical Standards

Funding There was no funding for this study.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study, implied by their completion of the survey.

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