

Operating Bias? Racial and Ethnic Inequities in Surgical Specialties

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Differences in quality and rates of health, health care, morbidity, and mortality among patients of varying racial or ethnic groups, or health care inequities are unfortunately pervasive in the surgical literature and among surgical specialties. This commentary provides a brief review of this literature to bring attention to and discuss ways in which racial health inequities might be addressed within the surgical environment. They may result from any combination of patient, societal, system, and provider-related factors. Inequities exist in relation to health care access, treatments, and post-operative outcomes. Potential ways to better address and rectify racial and ethnic inequities are through continued research into causes of inequities, as well as establishment, implementation, and adherence to standardized, objective treatment guidelines. Significant and continued efforts are needed in order to develop better understanding of and potential solutions for reducing these inequities.

Keywords: Racial/ethnic inequities, inequities in surgery, surgical specialties

Background

Health care disparities or inequities are defined as differences in quality and rates of health, health care, morbidity, and mortality among patients of varying racial or ethnic groups.¹⁻⁴ Health care inequities exist among patients across surgical subspecialties, including general, oncologic, vascular, gynecologic, colorectal, and endocrine surgery, among others. Many factors contribute to the pervasive racial and ethnic inequities in surgical care.

Inequities in Access to Surgical Care

Lack of equitable access to surgical care is a significant source of inequities for racial and ethnic minority groups. Factors that contribute to inequities in access to care include patient health literacy, educational status, income status, insurance status, language barriers, and cultural beliefs.⁵ For example, Saha et al. utilized data

from a national telephone survey and found that Black and Hispanic patients prefer to see physicians of their own race due to personal and language preference.⁶ They also found that Black patients would delay medical treatment in order to see a practitioner of their own race,^{5,6} indicating potential distrust of the medical

system, poor physician-patient communication, poor patient health-literacy, poor physician understanding of cultural expectations, or implicit biases. Patients may also receive differing treatment recommendations based upon their race: Shah et al. reported that Black patients with pancreatic cancer were recommended to undergo surgical resection less often than White patients.⁷ Furthermore, Black patients for whom surgical resection was recommended were less likely than White patients to actually then undergo surgical resection.⁷

Socioeconomic status also plays a role. Black and Hispanic patients are more likely to reside in zip codes with associated lower mean income levels and utilize Medicaid at higher rates than White patients.⁵ Patients with Medicaid insurance have been shown to have increased environmental stress, delayed access to care, and limited availability of health resources, all of which can lead to poor health outcomes.⁵ Additionally, racial inequities in the treatment of patients with a variety of resectable gastrointestinal cancers is significantly related to patients' socioeconomic status: lower socioeconomic status patients are substantially less likely to undergo surgical resection of their cancer, and patients of lower socioeconomic status had significantly shorter overall survival than patients of higher socioeconomic status.⁸ For example, for patients with rectal cancer specifically, patients with higher socioeconomic status (e.g. higher income, higher education level, and private insurance) had better access to treatment in academic and higher volume hospitals, which were associated with improved overall postoperative survival for these patients.⁹

Access inequities are also related to hospital-specific factors. Black patients have been shown to be more likely to be treated at

low-volume hospitals or by low-volume surgeons, both of which provide less advanced and lower quality surgical care.¹⁰⁻¹² For example, it has been shown that Black and Hispanic patients undergoing thyroidectomy or parathyroidectomy are more likely to be treated by low-volume surgeons (<25th percentile, 1-4 operations per year), which are associated with higher rates of complications.¹⁰ Black patients with ovarian cancer are also less likely to be operated on by high-volume surgeons (≥ 10 cases/year) or undergo important ovarian-cancer specific procedures (e.g., hysterectomy, colon resection, and lymphadenectomy), which are more likely to be performed by high-volume surgeons.¹¹ These patients are also 20% less likely to receive care concordant with National Comprehensive Cancer Network (NCCN) treatment guidelines.¹¹ Racial and ethnic minority patients are over-represented in lower-quality hospitals, which leads to poorer outcomes in their population of patients undergoing cardiac surgery.¹³ When it comes to emergency surgical procedures, Black patients have increased likelihood of postoperative death due to being treated more frequently at hospitals with higher mortality rates.¹⁴ Hospital factors that contribute to higher mortality rates include an urban setting and a larger number of beds, both of which have been shown to be associated with poorer outcomes.¹⁴ This suggests that these hospitals may have a lack of resources which, in turn, disproportionately impacts racial and ethnic minority patients' access to needed health care. Structural racism likely plays a role in these health access inequities as a deeper seeded societal construct in the form of historical residential segregation that has led to poorer access of minority groups to high-volume hospitals and surgeons.^{15,16} These access issues ultimately lead to worse post-operative and survival outcomes.

Inequities in Treatment and Outcomes

Racial and ethnic minority groups are subject to receiving different, and sometimes inferior, treatment recommendations, which can lead to worse health outcomes. Minimally invasive surgery has become the standard of

care over open surgery for many intra-abdominal operations¹² due to decreased postoperative pain, earlier return to work and normal activities, decreased incidence of postoperative complications, improved patient

satisfaction, shorter length of hospital stay, and reduced hospital costs compared to open surgical approaches.^{12,17} Black, Hispanic, and Asian patients are less likely to undergo minimally invasive surgery with regards to inguinal hernia repair, cholecystectomy, appendectomy, colectomy, and gynecologic surgery.^{12,18} Black patients are less likely to have minimally invasive surgery for uterine fibroids and have overall poorer outcomes compared to White patients.¹⁹ The inequities for patients undergoing minimally invasive surgery may stem from access to surgeons or facilities with these capabilities or implicit bias of providers in offering minimally invasive techniques.

While peripheral arterial disease disproportionately affects Black and Hispanic patients, Black patients are less likely to receive preventative vascular screenings and limb-saving interventions such as angioplasty and lower extremity bypass.^{2,20–23} Black patients are also more likely to have long-term graft failure after bypass procedures, undergo initial or eventual amputation, and have amputations at higher levels on the extremities.^{20–23} Amputations lead to decreased independent functionality, psychosocial distress, decreased economic status, and lower quality of life for patients.^{21,22} Consequently, limb salvage should always be the ultimate goal for patients. These inequities in surgical treatment may be related to access to surgeons or facilities with these capabilities or implicit bias of providers in offering limb-salvage techniques, but have significant consequences for patients.

Potential Solutions to Reduce Inequities

Clinical practice guidelines are an opportunity to eliminate variations in care while improving health outcomes and are one way to reduce racial and ethnic inequities in health care.²⁸ The success of guidelines and standardization cannot be understated: utilizing the standardized enhanced recovery after surgery (ERAS) pathway after colorectal surgery eliminated inequities in post-operative length of stay between Black and White patients.²⁹ Bristow et al. also showed that patients with

Treatment and outcome inequities may also be related to delayed patient presentation. For example, Black and Hispanic patients are more likely to present with acute hernia complications, leading to emergent surgery which results in higher rates of in-hospital death and longer post-operative length of stay.¹ These inequities can be related to poor access to or quality of preventative care, treatment of disease-specific risk-factors, patient health literacy, and income and insurance statuses. Compared to White patients, Black patients experience longer wait times between diagnosis of pancreatic cancer and surgery⁷ which can lead to cancer advancement and poorer outcomes.

Black patients have also been shown to have higher readmission rates following colorectal surgery despite adjustment for social determinants of health, longer post-operative length of stay with or without the presence of complications, and higher complication rates.^{4,24,25} After bariatric surgery, Black patients experience poorer outcomes such as longer operative time, longer length of hospital stay, increased rates of readmission, reoperation, reintervention, renal failure, pulmonary embolism, venous thromboembolism, and mortality.^{26,27}

In sum, racial and ethnic minority groups sometimes receive different levels of surgical treatment when compared to White patients. This includes surgical options, surgical techniques, and preventative interventions. Ultimately, these inequities in surgical care lead to poorer health outcomes and lessened quality of life for the minority patients.

ovarian cancer who received equivalent care regardless of race or ethnicity, had similar outcomes.¹¹ Together, these studies bring forward the importance of and potential for standardization of care, guideline creation, and guideline adherence and their potential impact in reducing race and ethnic-based variations in surgical care.

Cultural humility and implicit bias trainings are another way to work towards lessening health care inequities. Cultural humility is an

ongoing endeavor of learning, experiences, and self-reflection that providers can be trained in in order to strive towards better understanding their patients, and their experiences, preferences, needs, and cultures.³⁰ Providers must also recognize that there is always going to be more for them to ask, learn, and challenge in order to aim towards providing equitable, high-quality health care.³⁰ It may also help health professionals to recognize their own implicit biases which are peoples' unconscious biases that alter their actions.³¹ These unconscious biases can result in unintentional stereotyping or discriminatory behaviors.³¹ Teaching providers about and helping them to identify their own implicit biases can aid in lessening their impact in patient care and outcomes. Sarver et al. discusses addressing patient and provider biases in relation to bariatric surgery, noting that it is a significant barrier to utilization of this safe and efficacious treatment for obesity, especially for

racial and ethnic minority groups.³² They suggest that education about such weight-biases can lead to improved awareness and more equitable surgical treatment.³² Cultural humility and implicit bias training can be incorporated during medical training and in continuing medical education during practice. It may help to produce more well-rounded, understanding, and equitable health care providers.

Furthermore, more broad social changes could potentially impact overall racial and ethnic inequities which would carry over into surgical care. Such social changes could include increased access to health insurance which would increase access to health care services, continued efforts towards value-based reimbursement for care, continued efforts to diversify the medical and surgical professions, anti-poverty programs, and increased social protections for racial and ethnic minority groups.

Conclusion

Racial and ethnic inequities in surgical care are widespread and multifactorial. Beyond recognizing these inequities, it is crucial to develop better understanding of why they exist and how to address them. While this review is not exhaustive of all the examples of inequities within surgery, it highlights notable examples. Significant attention should be paid to the modifiable factors, many of which may overlap, such as implicit bias, health care access, and

socioeconomic status. Potential solutions for reducing racial and ethnic inequities in surgical care involve provider recognition and self-reflection as well as guideline creation, dissemination, adoption, and adherence. These actions only begin to scratch the surface of what is needed to reduce these inequities and improve care.

Conflicts of Interest

The authors have no relationships to disclose.

Statement of Contributions

Dr. Kling and Dr. Taylor were involved in concept development. Dr. Kling was responsible for writing the manuscript. All authors were responsible for critical review and editing of the manuscript.

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