Cultural Competence and the Postoperative Experience: Pain Control and Rehabilitation

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Abstract: Healthcare inequities exist across healthcare and have been shown to influence patient care and outcomes. In the field of orthopaedic surgery, healthcare disparities have been shown to manifest in the realms of postoperative pain management and rehabilitation. Previous literature has demonstrated that socioeconomic status, sex, gender, race, and ethnicity influence postoperative pain management and can precipitate a negative patient experience, manifesting as poorly managed pain and undertreatment of minorities and patients of lower socioeconomic status. A similar body of literature has revealed similar barriers in postoperative rehabilitation, particularly with regard to accessibility, language, rapport, and culture. These disparities impact patients, ranging from diminished surgical satisfaction to postoperative morbidity. As the United States becomes increasingly diverse, cultural competence plays a major role in combating these disparities. This article presents methods to promote cultural competence, including greater diversity in the medical field, a greater emphasis on cultural competency in education and training programs at all levels of healthcare, increased resources allocated to researching healthcare inequities, and more effective mechanisms of patient education.

An understanding of cultural competence is essential for the delivery of quality, patient-focused healthcare in the United States. Cultural competency has been defined as "the ability of individuals and systems to respond respectfully and effectively to people of all cultures, classes, races, ethnic backgrounds, sexual orientations, and faiths or religions in a manner that recognizes, affirms, and values the worth of individuals, families, tribes, and communities, and protects and preserves the dignity of each."[1] According to the Census Bureau and the Williams Institute, more than 40% of the United States population identify with a racial or ethnic minority group, and 3.5% to 11.7% of the population identify as lesbian, gay, bisexual, other, or unknown.[2-5] It is predicted that by 2050 more than 50% of the United States population will belong to a group other than non-Hispanic white.[6] With increasing diversity in the United States, delivery of culturally competent healthcare is becoming increasingly important.

Cultural proficiency actively influences when and where patients seek care, how they describe their symptoms, treatment considerations, and adherence to treatment protocols.[7] Although research is limited, it is thought that culturally competent healthcare organizations and providers will be able to provide quality care and improve patient outcomes, experience, and safety.[8-11] Upadhyay et al.[11] demonstrated that hospital systems with high degrees of diversity program engagement had 4.64% higher perceptions of management support for safety compared to hospitals with low engagement in diversity programs ($P < .05$). Likewise, systems with high degrees of diversity program engagement had 3.19% higher perceptions of teamwork across units ($P < .05$) compared to hospitals with low engagement in diversity programs.[11] Despite this, providing culturally competent care has proved to be a difficult endeavor, particularly because a preponderance of research on healthcare delivery has neglected to report on the healthcare of individuals of minority groups and those of lower socioeconomic statuses, which has made it difficult for medical providers to guide treatment or produce consensus statements.[12]

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Healthcare disparities are most evident in racial and ethnic minority groups, particularly among lower socioeconomic groups, as well as among individuals with lower healthcare literacy.[13] These disparities are evident throughout the field of orthopaedics. Singh et al.[14] and Usiskin et al.[15] found that racial and ethnic minorities were less likely to undergo joint replacement, and when they did, they reported inferior postoperative outcomes. Singh et al.[14] reported that in 2008, the use of primary total knee replacement was 39.7% lower in the Black population (41.5 per 10,000 for Black patients; 68.8 per 10,000 for white patients; $P < .0001$) and that length of stay (LOS), 30-day mortality, and 30-day readmission rates were all inferior compared with those of white patients (LOS: 3.9 days vs 3.6, $P < .001$; 30-day mortality: 0.3% vs 0.2%, $P < .001$; 30-day readmission: 8.8% vs 6.7%, $P < .001$).[14] Stafford et al.[16] performed a meta-analysis of 12 studies and found that cost, socioeconomic status, insurance, and racial identity influenced timing and access to appropriate care and the recovery for patients undergoing anterior cruciate ligament reconstruction.[16] Furthermore, several studies have shown that patients with private insurance received more expeditious magnetic resonance imaging and surgical intervention for anterior cruciate ligament pathology, as compared to those who had public insurance or no insurance.[17-19] Similar trends of healthcare disparities exist within pain management and rehabilitation. In the setting of acute pain, Black and Hispanic patients were less likely (odds ratio = 0.60 and 0.75, respectively) to receive analgesics in the emergency department than white patients.[20] In patients over 65 years old and requiring advanced rehabilitation services, white patients were 38% more likely to receive rehabilitation than Black patients, and patients in the fiftieth percentile or higher of income were more than 52% times more likely to receive rehabilitation compared to patients below the twenty-fifth percentile of income.[21] Literature illustrates the challenges that many patients face with accessibility to appropriate orthopaedic intervention and the disparities of pain management and rehabilitation that exist across healthcare.

There is limited literature summarizing the healthcare disparities of pain management and rehabilitation within orthopaedics. The purpose of this article is to highlight some of the disparities while emphasizing the importance of cultural competency in pain control and rehabilitation, particularly within the orthopaedic field.

Health Disparities in Pain Control

Cultural competence and safety as they pertain to postoperative pain management is an important topic of research and healthcare training because of its implications on patient outcomes. Orthopaedic literature has demonstrated areas where socioeconomic status, sex, race, and ethnicity influence postoperative pain management, particularly among patients undergoing joint arthroplasty. Waldrop et al.[22] demonstrated that, among shoulder arthroplasties, patients with socioeconomically disadvantaged insurance had worse postoperative pain and functionality compared to those with private insurance (Visual analog scale: 2.1 vs 3.4, $P = .008$; Shoulder Pain and Disability Index: 24.8 vs 43.8, $P = .016$; American Shoulder and Elbow Surgeons Standardized Shoulder Assessment Form: 75.1 vs 66.4, $P < .001$; 12-item Short Form Health Survey: 36.8 vs 32.0, $P < .001$).[22] Davis et al.[23] found similar results in total knee arthroplasties (TKA), with low income being associated with worse pain at 12-month follow-up (WOMAC pain score: <$15,000: 78.0 and >$60,000: 87.0, $P = .014$). Similar trends may exist between male and female sex. A retrospective study by Caicedo et al.[24] of 1038 male and 1575 female subjects with idiopathic joint pain after total joint arthroplasty found that females had significantly higher pain levels after surgery (6.8 vs 6.1, $P < .0001$). Likewise, a study investigating the differences in TKA outcomes in age-matched groups of men and women by Nandi et al.[25] reported, that after TKA, females had significantly greater pain scores 2 weeks after surgery ($P < .05$); however, these trends became statistically insignificant at 6-week, 3-month, and 6-month follow-up. Surgeons must be cognizant that patient sex and socioeconomic status may have a significant effect on postoperative outcomes.

One area in which healthcare disparity is evident in relation to pain management is opioid use. Risk factors including male sex, increased body mass index, chronic preoperative opioid use, and history of anxiety/depression have been established for opioid use in pain management and length of postoperative opioid use.[26-36] A prospective study of 250 patients (36 Black patients, 100 Hispanic patients, and 114 white patients) after open reduction and internal fixation of limb fractures by Ng et al.[37] found that Black and Hispanic patients received lower-dose analgesics during their hospitalization (average LOS of 4.45 days) than white patients (Black: 16 mg/day, Hispanic: 13 mg/day, white: 22 mg/day, $P < .002$). Similarly, despite similar pain complaints because of long-bone fractures, the emergency department gave white patients analgesics significantly more often than Black patients (74% vs 57%, $P = .01$).[38] These disparities in pain control can have significant implications on the patient-perceived experience both from a preoperative and postoperative perspective.

It is thought that the disparity in pain assessment and treatment may be attributed to a relatively homogenous pool of medical students and healthcare providers, and their inaccurate perception of biological difference in pain tolerance, leading to inappropriate pain

management in racial minorities. For example, Hoffman et al.[39] found that among white first-, second-, and third-year medical students and residents, 11.7% believed it was valid that Black individuals had less-sensitive nerve endings than white individuals, and 58.1% believed it was possible that Black individuals had thicker skin than white individuals. These false beliefs and biases may contribute to the reason why Black individuals have been thought to have significantly decreased pain compared to white individuals.[39,40] Certainly, these findings are concerning and further warrant the need of cultural competence within healthcare.

Surgeons' beliefs and biases impact how patients are treated and how postoperative pain is managed. Although greater research helps physicians understand the factors that influence patients' pain and response to management, it is important to practice in accordance with up-to-date scientific literature and to protect patients from implicit biases. Further action including, but certainly not limited to, continued education and training on cultural competence will help to eliminate disparities and inequities with treating patients.

Health Disparities within Postoperative Surgical Rehabilitation

Cultural disparities and language barriers among minority groups can have a significant effect on the patient experience during rehabilitation. Dogan et al.[41] explored the physiotherapy of Turkish individuals who were living in Germany from both the patient's and the therapist's perspectives. Culture, language, habits, and religion were reported to be major barriers to care of their patients by 96%, 100%, 90%, and 80% of physiotherapists, respectively. These same barriers to care were reported by 40%, 100%, 80%, and 30% of patients, respectively. Likewise, 90% of physiotherapists reported that they desired to transfer their Turkish patients to other providers, whereas only 36% of patients desire to switch providers. Up to 90% of both patients and providers believe educational training would be beneficial to care.[41] Similarly, Jaggi and Bithell[42] investigated the attitudes of physiotherapists in treating Bangladeshi patients in 2 inner city healthcare facilities within London, United Kingdom. Among 64 therapist, 48% of therapists found it difficult to effectively communicate with their patients "occasionally," and 52% of therapists found it difficult to effectively communicate with their patients "frequently." In addition, 85% reported difficulties evaluating whether therapy was effective because of patient's lack of understanding; 85% and 57% of therapists reported treating Bangladeshi patients as more frustrating or challenging, respectively; and 46% reported they are not able to provide equal care to Bangladeshi patients as white patients. When discussing solutions to these problems, 40% of physiotherapists preferred interpreters, 24% preferred cultural awareness training, 15% preferred speaking their language, 10% preferred Bangladeshi physiotherapists, 6% preferred link workers, and 4% preferred an alternative option.[42] Physiotherapists need to be aware of these barriers to care, and, without current consensus, further work is needed to optimize culturally-sensitive rehabilitation practices to meet patient needs.

Sze-Mun Lee et al.[43] interviewed physiotherapists in Australia who provided care for patients with non-English backgrounds. They found that communication was a persistent issue. Although it was recommended that therapists communicate with their patients through professional healthcare interpreters, many therapists relied on family members, nonverbal communication, simplified English or community language, and bilingual staff members. However, these methods of communication can lead to bias, misinterpretation, and less-effective care.[43]

Language and communication present a major barrier to care because therapists and rehabilitation specialists are unsure whether patients understand instructions or the goals of therapy. Interpreters may be introduced as a solution but may present logistical or financial problems for many facilities. Staff members could conceivably assist in interpreting in certain cases; however, this may cause problems with availability and staffing, as well as technical language skills. Professional interpreters have rarely been used, with cost and availability cited as barriers.[44] Although many studies offer insight into the healthcare disparities that exist within postoperative rehabilitation and the potential solutions to these inequalities, it is also evident that further research needs to be completed in this area. More specifically, it is not only important to identify the disparities that exist within postoperative orthopaedic physiotherapy in the United States but also to develop strategies to deliver care to a multitude of cultures, languages, socioeconomic statuses, and sexes.

The Role of Cultural Competence

Healthcare disparities exist across healthcare and continue to be evident in pain management and rehabilitation. Patient, physician, therapist, and systemic factors all contribute to these inequities. Certainly, change is needed to bring about more equal and equitable care. Satcher et al.[45] calculated the impact of healthcare disparities on the African American population by using the age-specific mortality rates of whites compared to African Americans of the same age and comparing that value to the actual number of deaths over a 40-year period. Per 2002 data, an estimated 83,570 African American deaths per year would be prevented if racial disparities were removed.[45] In

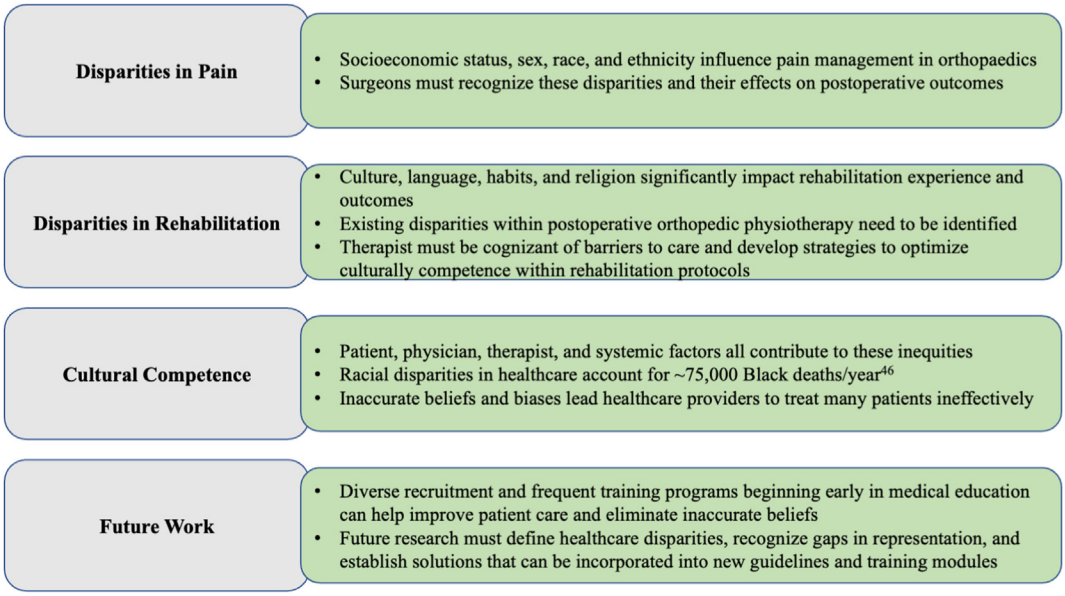

Fig 1. Overview outlining the primary findings and recommendations regarding cultural competence and its role in post-operative pain management and rehabilitation within orthopaedics and sports medicine.

2016–2018, the all-cause mortality rate among Black populations was 24% higher than among white populations. Mortality rates of Black populations were significantly higher than those of white populations in 29 of the 30 largest United States cities (rate ratios ranged from 1.06 to 2.32). As a result of these disparities, an excess of 74,402 Black deaths occurred annually in the United States between 2016 and 2018.[46] Increased awareness of these cultural disparities among physicians, providers, and healthcare organizations is an essential starting point.

As Hoffman et al.[39] explained, inaccurate beliefs and biases lead healthcare providers to treat many patients ineffectively. Research guidelines can enable caregivers to provide the best clinical care, but this is interrupted by these false beliefs and biases. A shift in training and education to promote diversity and competency is a starting point in eliminating healthcare disparities. Smith et al.[10] explain that cultural competence training must occur at multiple levels, including the individual, surgical teams, academic centers, and physician training programs. They emphasize that cultural competency training must begin early in medical education with the recruitment of diverse minorities and should routinely be required of all healthcare providers regardless of background or level of training.[10] This emphasis on the recruitment of diverse healthcare providers was a suggestion of physiotherapists in the rehabilitation literature.[42,47] Studies investigating this topic have concluded that diversity in healthcare providers helps to eliminate disparities by improving patient satisfaction and trust, increasing cultural competence in the patient-provider relationship, expanding minority patient's use of healthcare, increasing access to care for geographically underserved populations, and promoting the inclusion of minorities in research, as well as other societal benefits.[48,49] Certainly, training programs and recruitment should be designed in ways that allow these lessons to be easily transitioned into patient care.

Future work must prioritize cultural competency and work to quantify the patient experience (Fig 1). The realm of healthcare disparities and cultural competency remain a relatively new academic endeavor.[13] Further research must define healthcare disparities and also assist in discovering solutions that can be incorporated into new guidelines and training modules. One area of growth is the inclusion of more racial, ethnic, and cultural minority groups. Studies in the past have often grouped minorities as "non-white participants" or only compared Black patients to white.[12,39] Similarly, females have been under-represented in sports medicine research. In a 3-year analysis of 1382 articles and over 6 million patients across 3 major sports and exercise medicine journals, Costello et al.[50] found that only 39% of participants were female (2,366,368 females vs 3,709,612 males, $P < .00001$), and fewer studies included female-only analyses compared to male-only analyses (4%-13% female only vs 18%-34% male only).[50] Because injuries and diseases differ across sex and gender, it is increasingly important to include gender-specific and sex-specific analyses in the future of sports medicine literature.[51] As the population of the United States diversifies, research populations also need to diversify and focus on optimal medical care for all groups and communities.

It should be noted that research in this area has challenges. For example, patients most affected by healthcare disparities also often have barriers in place that prevent them from participating in research.[12,52,53] When under-represented patients participate, they are asked to identify as a single group or category, when in reality there is often overlap, thus confounding the data.[12] Furthermore, as a result of unethical studies on vulnerable populations in the past, a level of distrust exists that builds yet another barrier. Ethical transparency will be necessary in rebuilding trust in medical research and advancing cultural competency literature.

Healthcare literacy plays a fundamental role in cultural competency. As of 2003, 40% of Americans were considered to have limited healthcare literacy, with a preponderance of low-healthcare literacy metrics stemming from non-white and Hispanic populations.[7] for clinicians, effective culturally-sensitive communication and patient education can help address this issue. At the level of healthcare systems, greater resources can be focused on meeting the needs of patients. For example, low literacy is associated with poor medication adherence and increased risk of adverse effects.[54] Clarity and resources for patients with low healthcare literacy or with language barriers can help eliminate these negative effects.

Conclusion

Healthcare disparities are an ongoing problem. These disparities are endemic across surgical subspecialties, in pain management administration, and in rehabilitation. Acknowledging their existence is an important first step, but further action is required to address these inequities that predominantly impact minority and low socioeconomic populations. Routine reflection and training need to be a part of healthcare at all levels. Further emphasis needs to be given to research in this area to address the existing gaps and better guide the approach that healthcare systems take in eliminating healthcare disparities. Patient education and individualistic care will help promote awareness and safety, thus allowing cultural competence to be integrated into clinical care.

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