A Comparison of Inpatient versus Ambulatory Lumbar Surgical Care Utilization among Minority Patients

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INTRODUCTION: While a growing proportion of orthopaedic surgical care is shifting from an inpatient to an ambulatory setting, it is unclear if this shift occurs equitably among patient subgroups. Racial/ethnic disparities in inpatient lumbar surgical care utilization have been well documented, however, disparities (if any) in ambulatory care utilization are not as well described. This study sought to 1) identify racial/ethnic disparities in ambulatory surgical care utilization and 2) compare disparities in surgical care utilization between ambulatory and inpatient settings for patients undergoing lumbar spinal surgery.

METHODS:

This institutional review board-exempt retrospective cohort study examined 2019 National Inpatient Sample and National Ambulatory Surgical Sample discharge summaries. We included patients with a diagnosis of lumbar stenosis, disc herniation, disc degeneration, spondylosis, and/or spondylolisthesis, who had undergone a lumbar discectomy, laminectomy, and/or fusion, were of Black, White, or Hispanic race/ethnicity, were covered under Medicare, Medicaid, or private insurance, and were aged ≥18 years. The primary outcome was the rate ratio (RR) of patients from the aforementioned three racial/ethnic groups undergoing lumbar surgical care, in the ambulatory and inpatient settings. RRs were generated from multivariable generalized linear models with Poisson distributions accounting for gender, age, Deyo-Charlson Comorbidity Index, obesity, primary payor, zip code income quartile, hospital geographical region, and procedure type. US Bureau of Labor Statistics data were utilized to offset the model for population-based variations in sociodemographic factors utilizing nested coefficients. RRs and 95% confidence intervals (95% CI) are reported.

RESULTS:

Among 435,310 included cases 271,100 (62.3%) were inpatient (of which 85.7% White, 8.3% Black, and 6.0% Hispanic), and 164,210 (37.7%) were ambulatory (of which 88.7% White, 5.8% Black, and 5.5% Hispanic). Patients undergoing lumbar surgical care in an ambulatory setting were more often White, male, younger, less comorbid, less likely to be obese, and more often had their procedures performed in large hospitals. Moreover, lumbar fusions (66.9%) accounted for the majority of inpatient procedures while discectomies alone (50.1%) accounted for the majority of ambulatory procedures. After adjusting for covariates, compared to White patients, Black (RR: 0.42, 95% CI: 0.41 - 0.43) and Hispanic (RR: 0.60, 95% CI: 0.59 - 0.61) patients had lower utilization rates of ambulatory surgical care. Similar, but less pronounced patterns were observed for inpatient surgical utilization: Black patients RR: 0.81 95% CI: 0.80 - 0.82, and Hispanic patients RR: 0.97 95% CI 0.95 - 0.99; all $P < 0.001$.

DISCUSSION AND CONCLUSION:

Racial/ethnic disparities in lumbar surgical care utilization are more pronounced in the ambulatory compared to the inpatient setting. These results suggest inequitable access to ambulatory lumbar surgical care. Given the increasing shift toward ambulatory lumbar spinal surgery, continued monitoring of these disparities is needed as well as a thorough investigation of potential mechanisms and ways to ameliorate these disparities.