

Neighborhood Of Residence Matters For Patients Recovering From Lower Extremity Joint Arthroplasty

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INTRODUCTION:

There is minimal literature investigating how patient location and neighborhood-related factors may explain disparities in total joint arthroplasty (TJA) outcomes. This study examines association of distinctive characteristics of neighborhood socioeconomic disadvantage with outcomes and complications following TJA.

METHODS: Patients who underwent primary elective total knee or total hip arthroplasty surgery at a single institution, between 2012 and 2021, were identified and reviewed. Patient procedural, clinical, socio-economic, and demographic information were extracted from an electronic clinical database. Measures investigated were patient neighborhood-based Area Deprivation Index (ADI), National walkability index score, distance to nearest transit stop, and historical redlining category. Outcomes assessed included complications (perioperative, medical, and implant), length of stay ≥ 3 days, discharge to facility, all-cause revision within two years, and 90-day emergency department and hospital readmission events. After univariate analysis, all significant variables underwent multivariate logistic regression.

RESULTS: 5,169 patients met inclusion criteria and were analyzed. Increased odds of any type of complication was found to be associated with living in a neighborhood considered to be less walkable (OR 1.11, $p < .05$), a history of illicit drug use (OR 1.6, $p < 0.05$), prior opioid use (OR 1.95, $p < 0.001$), and an ASA classification of 3 or 4 (OR 1.4, $p < .05$). Increased odds of being discharged to a hospital facility was associated with an ADI within the top three quartiles (OR 1.42, 1.69, 1.54, respectively; $p < .01$) and being Black or African American (OR 1.66, $p < 0.001$).

DISCUSSION AND CONCLUSION:

Patients residing in neighborhoods considered to be more disadvantaged and historically categorized as undesirable have increased odds of experiencing an adverse postoperative event. This study highlights the value of clinical-based data, and the relationship between potentially modifiable patient-specific public health measures, the patient's neighborhood of residence, and health outcomes in TJA.