

# Neighborhood Socioeconomic Disadvantages Associated with Increased Rates of Revisions, Readmissions, and Complications after Total Joint Arthroplasty

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**INTRODUCTION:** Vulnerable populations include patients from lower socioeconomic status (SES), who are at an increased risk for infection, revision surgery, mortality, and postoperative complications after total joint arthroplasty (TJA). The Area Deprivation Index (ADI) provides a composite area-based indicator of socioeconomic disadvantage consisting of 17 United States census indicators, based on education, employment, housing quality, and poverty. We assessed **1) patient risk factor profiles and 2) multivariate regressions of total complications at 30-days, 90-days, and 1-year.**

**METHODS:** A prospectively collected database of 3,024 patients who underwent primary elective TKA and THA performed by three fellowship-trained orthopaedic surgeons from September 21, 2015 through December 29, 2021 at tertiary healthcare center. Patients were divided into 1) quintiles, ADI ≤20 (n=555), ADI 21-40 (n=1,000), ADI 41-60 (n=694), ADI 61-80 (n=396), and ADI 81-100 (n=378); as well as 2) **into groups below or equal to the national median ADI of 47 (n = 1,896) and above (n = 1,128).**

**RESULTS:** There was a significant difference for higher quintiles, in regard to more females (p=0.002) and higher incidences of diabetes (p<0.001), CHF (p=0.0002), COPD (p<0.0001), HTN (p<0.001), substance abuse (p<0.0001), and tobacco users (p<0.001) between the cohorts. When accounting for several confounding variables, all ADI quintiles were not associated with increased total complications at 30-days but age (p=0.023), female sex, CHF (p=0.03), COPD (p=0.001), HTN (p=0.003), and CKD (p=0.001) were associated. At 90-days, ADI>47 (p=0.04), female sex (p=0.035), and CHF (p=0.0097) were associated with increased total complications.

**DISCUSSION AND CONCLUSION:** Balancing intrinsic factors, such as patient demographics as well as extrinsic factors, such as SDOHs, may minimize postoperative complications after TJA. ADI is one tool that can account for several components of extrinsic factors that can serve as a starting point to improving patient education and management in the setting

of

TJA.

The figure consists of 10 small tables arranged in a grid. The first column contains two tables: 'Patient Risk Factor Profiles' and 'Multivariate Regressions of Total Complications at 30-days'. The remaining eight tables are organized into two groups of four, corresponding to '90-days' and '1-year' follow-up. Each table in the second group contains regression coefficients, p-values, and confidence intervals for various risk factors across different ADI quintiles. The tables are densely packed with numerical data and statistical results.