Health Disparities in Revision Total Hip Arthroplasty: Assessing the Impact of Social Determinants of Health

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INTRODUCTION:
Social determinants of health (SDOH) have been shown to reliably predict outcomes in patients undergoing orthopaedic procedures. However, there remains a paucity of data in the literature on whether SDOH can predict adverse outcomes in those undergoing aseptic revision THA (rTHA). The purpose of this study was to examine the relationship between SDOH and clinical outcomes in patients undergoing aseptic rTHA.

METHODS:
This retrospective study identified 843 patients undergoing aseptic rTHA using an institutional joints registry. Data on demographics, length of stay (LOS), 90-day complications, discharge disposition and re-revisions was recorded. The Area Deprivation Index (ADI) and four subscales of the Social Vulnerability Index (SVI) were identified using census tract codes. High vulnerability to SDOH was defined as the top quartile for ADI and each SVI category. A multivariate regression was performed to identify risk factors for worse clinical outcomes.

RESULTS:
Patients with a higher ADI (43.2% vs 22.6%, $p<0.001$) and SVI (22.9% vs 32.9%, $p=0.011$) were more likely to be revised for aseptic loosening. Periprosthetic fractures were more prevalent in patients with a high housing and transport (H&T) specific SVI (27.8% vs 20.4%, $p=0.041$). When controlling for sociodemographic variables, using multivariate regression models, a high overall SVI was an independent risk factor for increased LOS ($\beta= 0.95$, $p=0.003$), postoperative wound drainage (OR=2.37, P=0.041), and mortality (OR=3.84, P=0.001). A high household-specific SVI was a risk factor for increased length of stay ($\beta= 0.85$, $p=0.009$). Similarly, a high H&T-specific SVI was an independent risk factor for postoperative wound drainage (OR= 2.46, P=0.015) and 90-day complications (OR=1.68, P=0.029).

DISCUSSION AND CONCLUSION: Given that patients undergoing rTHA are more likely to experience adverse outcomes following surgery, SDOH can serve as a valuable screening tool to help identify high-risk patients and guide treatment protocols.