

Title: Fostering Equity in Orthopedic Outcomes: Uncovering the Impact of Social Determinants on Rotator Cuff Repair Surgery

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Introduction: Rotator cuff tears are a common orthopedic injury, and the role of social determinants of health (SDoH) in surgical outcomes remains underexplored. We investigate the correlation between social deprivation, measured by the Area Deprivation Index (ADI), and outcomes following arthroscopic rotator cuff repair.

Methods: We conducted a retrospective chart review on patients undergoing arthroscopic rotator cuff repair. Demographics, ADI scores, range of motion, pain scores, and outcomes were collected and analyzed using ANOVA, t-tests, chi-square tests, odds ratios, and logistic regression.

Results: Among 330 patients, ADI-based terciles revealed higher diabetes prevalence and obesity rates in the most deprived group ( $p<0.001$ ). Massive tear occurrence was elevated in the least deprived group ( $p<0.05$ ). Patient-reported outcomes, including ASES ( $p=0.003$ ) and QuickDASH scores ( $p=0.003$ ), were worse in the most deprived group. Clinician-reported outcomes showed no significant differences.

Discussion: ADI emerged as a stronger predictor of tear size than race. Social deprivation impacted patient-reported functionality and quality of life. Consistent clinician-reported outcomes across ADI terciles highlight the need for comprehensive tools considering SDoH and racial dynamics.

Conclusion: Social deprivation significantly affects patient-reported outcomes in rotator cuff repair surgery. While clinician-reported outcomes were consistent, patients' perceptions varied based on social determinants. Integrating SDoH considerations in orthopedic care ensures equitable approaches. Prospective research is needed to validate and expand these findings.

Significance: This study's exploration of the relationship between social deprivation and outcomes in rotator cuff repair surgery underscores the importance of addressing social determinants of health to ensure equitable orthopedic care. Recognizing the impact of these factors could lead to more tailored interventions and strategies that mitigate disparities in patient-reported functionality and quality of life, ultimately promoting more inclusive and patient-centered orthopedic practices.