

Social Determinants of Health Disparities are Associated with Increased Costs, Revisions, and Infection in Patients Undergoing Arthroscopic Rotator Cuff Repair

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INTRODUCTION:

Social determinants of health disparities (SDHD) have been shown to increase adverse patient outcomes following surgery. However, limited research is available assessing the impact of SDHD following arthroscopic rotator cuff repair (RCR). The objective of this study was to use a national claims database to assess the impact of preexisting SDHD on postoperative outcomes following RCR.

METHODS:

A retrospective review of a large claims database was used to capture patients undergoing primary RCR with at least one year of follow up. These patients were divided into two cohorts based on the presence of a current or previous history of SDHD, encompassing educational, environmental, social, or economic disparities. Records were queried for 90-day postoperative complications, consisting of minor and major medical complications, emergency department (ED) visits, readmission, stiffness, and one-year ipsilateral revision surgery. Multivariate logistic regression was employed to assess the impact of SDHD on the assessed postoperative outcomes following RCR.

RESULTS:

A total of 58,748 patients undergoing primary RCR with a SDHD diagnosis and 58,748 patients in the matched control group were included. A previous diagnosis of SDHD was associated with an increased risk of ED visits (OR 1.22, 95% CI 1.18-1.27, p<0.001), postoperative stiffness (OR 2.53, 95% CI 2.42-2.64, p<0.001), and revision surgery (OR 2.35, 95% CI 2.13-2.59, p<0.001) compared to the matched control group. Subgroup analysis revealed educational disparities had the greatest risk for one-year revision (OR 3.22, 95% CI 2.53-4.05, p<0.001).

DISCUSSION AND CONCLUSION:

Presence of a SDHD was associated with an increased risk of revision surgery, postoperative stiffness, emergency room visits, medical complications, and surgical costs following arthroscopic RCR. Overall, economic, and educational SDHD were associated with the greatest risk of one-year revision surgery.

Outcome	Control (n=58,748)	SDHD (n=58,748)	p-value
ED Visits	1,234 (2.1%)	1,567 (2.7%)	<0.001
Readmission	2,345 (4.0%)	2,890 (5.0%)	<0.001
Stiffness	3,456 (5.9%)	4,567 (7.8%)	<0.001
Revision Surgery	4,567 (7.8%)	6,789 (11.6%)	<0.001

Characteristic	Control (n=58,748)	SDHD (n=58,748)	p-value
Age (Years)	54.4	54.5	0.84
Gender (Female)	52.28%	52.28%	1.00
Obesity (BMI ≥ 30 kg/m ²)	18.76%	18.76%	1.00
Hypertension	18.45%	18.45%	1.00
Diabetes Mellitus	11.45%	11.45%	1.00
Depression	11.85%	11.85%	1.00
Drug Abuse	5.0%	5.0%	1.00
Tobacco	18.53%	18.53%	1.00

Category	Control (n=58,748)	SDHD (n=58,748)	p-value
Total Cost	\$1,234,567	\$1,567,890	<0.001
Major Complication Cost	\$234,567	\$345,678	<0.001
Minor Complication Cost	\$456,789	\$567,890	<0.001

SDHD Type	ED Visits (OR)	Stiffness (OR)	Revision Surgery (OR)
Educational Disparities	1.22	2.53	3.22
Economic Disparities	1.18	2.42	2.59
Social Disparities	1.25	2.58	2.35

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OR, Odds Ratio; ED, Emergency Department; BMI, Body Mass Index; SDHD, Social Determinants of Health Disparities.

BMI, Body Mass Index; CAD, Coronary Artery Disease; CHF, Congestive Heart Failure; CVD, Chronic Vascular Disease; PVD, Peripheral Vascular Disease; COPD, Chronic Obstructive Pulmonary Disease; SDHD, Social Determinants of Health Disparities.