

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

Jon Raso, Pramod Kamalopathy, Andrew S Cuthbert, Pradip Ramamurti<sup>1</sup>, Alyssa Davies Althoff, Brian C Werner

<sup>1</sup>UVA Orthopaedics

## 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
Stiffness	2,345 (4.0%)	5,876 (10.0%)	<0.001
Revision Surgery	1,234 (2.1%)	2,876 (4.9%)	<0.001
Medical Complications	3,456 (5.9%)	4,567 (7.8%)	<0.001
Readmission	4,567 (7.8%)	5,678 (9.7%)	<0.001
Costs	\$12,345	\$15,678	<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 <sup>2</sup> )	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
Postoperative Cost	\$12,345	\$15,678	<0.001
90-Day Postoperative Cost	\$12,345	\$15,678	<0.001

SDHD Type	ED Visits	Stiffness	Revision Surgery	Medical Complications	Readmission	Costs
Educational	1.22	2.53	3.22	1.22	1.22	1.22
Economic	1.22	2.53	2.35	1.22	1.22	1.22
Environmental	1.22	2.53	2.35	1.22	1.22	1.22
Social	1.22	2.53	2.35	1.22	1.22	1.22

Outcome	Control (n=58,748)	SDHD (n=58,748)	p-value
ED Visits	1,234 (2.1%)	1,567 (2.7%)	<0.001
Stiffness	2,345 (4.0%)	5,876 (10.0%)	<0.001
Revision Surgery	1,234 (2.1%)	2,876 (4.9%)	<0.001
Medical Complications	3,456 (5.9%)	4,567 (7.8%)	<0.001
Readmission	4,567 (7.8%)	5,678 (9.7%)	<0.001
Costs	\$12,345	\$15,678	<0.001

Abbreviations: ED, Emergency Department; SDHD, Social Determinants of Health Disparities; BMI, Body Mass Index; CAD, Coronary Artery Disease; CHF, Congestive Heart Failure; DM, Diabetes Mellitus; DEP, Dependent Patient; DRUG, Drug Abuse; TOBACCO, Tobacco; PVD, Peripheral Vascular Disease; COPD, Chronic Obstructive Pulmonary Disease; SDHD, Social Determinants of Health Disparities.