

Social Determinants of Health Increase Five-Year Revision Rates Following Primary Hip Arthroscopy

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INTRODUCTION: [The impact of social determinants of health \(SDOH\) on outcomes has become increasingly emphasized across orthopaedic surgery. However, to date, there exists limited research assessing the role of SDOH in hip arthroscopy. The purpose of the present study was to investigate the impact of SDOH on 30-day emergency department \(ED\) visits, 90-day postoperative complications, and five-year revision rates after primary hip arthroscopy using a large national database.](#)

METHODS: A national administrative claims database was used to identify patients who underwent primary hip arthroscopy with femoroplasty, acetabuloplasty, and/or labral repair between 2015 and 2022. Patients were queried for whether they experienced any SDOH, including economic, educational, environmental, or social disparities; those experiencing SDOH within 1 year prior to primary hip arthroscopy were matched 1:1 by age, sex, Elixhauser Comorbidity Index score, diabetes, obesity, and tobacco use to patients not experiencing any lifetime SDOH. Rates of 90-day complications and 30-day ED visits were compared using multivariable logistic regression. Rates of revision hip arthroscopy within five years were compared by Kaplan-Meier analysis.

RESULTS: A total of 3,383 primary hip arthroscopy patients who experienced SDOH were matched 1:1 to a control cohort of 3,383 patients who had not experienced SDOH (age, 41.0 years, 79.6% female, for both cohorts) (**Table 1**). Rates of adverse events following arthroscopy were low and not significantly different between cohorts (SDOH: 1.51%, vs. No SDOH: 1.57%; $p>0.05$) (**Table 2**). Additionally, there was no significant difference in rates of 30-day ED visits (SDOH: 5.65%, vs. No SDOH: 4.79%; $p>0.05$) (**Table 3**). The rate of five-year revision hip arthroscopy was significantly greater among patients experiencing SDOH (5.4% vs. 4.1%; $p=0.02$) (**Figure 1**).

DISCUSSION AND CONCLUSION: [Patients experiencing SDOH within one year prior to primary hip arthroscopy had similar rates of postoperative complications and ED visits but greater odds of five-year revision hip arthroscopy compared to a matched-control cohort of patients not experiencing SDOH.](#) These data highlight the significant impact of SDOH on long-term postoperative outcomes and bring to light the growing importance of multidisciplinary, culturally-competent orthopaedic care that equitably improves the health of all patients.

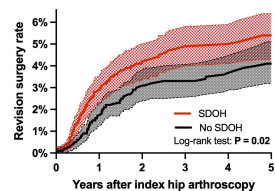


Table 1: Patient Characteristics and Complications

	Unmatched			Matched		
	No SDOH	SDOH	P-value	No SDOH	SDOH	P-value
Sample size	3,383	3,383		3,383	3,383	
Age, mean (SD), years	41.2 (12.1)	41.2 (12.1)	0.98	41.2 (12.1)	41.2 (12.1)	0.98
Sex						
Male	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Female	2,383 (70.0)	2,383 (70.0)		2,383 (70.0)	2,383 (70.0)	
Body mass index (BMI)						
<20	67 (2.0)	67 (2.0)		67 (2.0)	67 (2.0)	
20-29	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
30-39	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
40-49	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
50-59	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
60-69	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
70-79	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
80-89	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
90-99	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Diabetes	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Obesity	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Disability	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Education	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Environment	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	
Health	1,000 (30.0)	1,000 (30.0)		1,000 (30.0)	1,000 (30.0)	

Patients with SDOH were matched to patients without SDOH at 1:1 by age, sex, Elixhauser Comorbidity Index (CCI) score, incidence of diabetes, obesity, and tobacco use. SD: standard deviation; NA, not applicable.

Table 2: 90-day complications following primary hip arthroscopy, comparing patients with SDOH versus matched control cohort

Complication	SDOH		No SDOH		Odds Ratio (95% CI)	P-value
	N	%	N	%		
Total sample	3,383	100%	3,383	100%		
Any adverse event (AAE)	11	1.51%	31	1.79%	0.88	0.77-1.02
Wound dehiscence	10	0.90%	14	0.41%	0.69	0.30-0.84
Septic arthritis	7	0.21%	10	0.30%	0.69	0.18-1.25
Nerve injury	11	0.33%	9	0.27%	1.08	0.45-1.37
Urinary tract	4	0.12%	5	0.15%	0.63	0.15-1.22
Septic	7	0.21%	2	0.06%	0.79	0.18-1.65
Deep venous thrombosis	31	0.94%	27	0.80%	0.76	0.40-0.96
Pulmonary embolism	10	0.30%	7	0.20%	0.68	0.18-0.95

Numbers and percentages of patients experiencing various 90-day complications are depicted, along with odds ratios (ORs), 95% confidence intervals (CIs), and P-values for significant associations with SDOH. Bold indicates reference category for multivariate logistic regression analysis. OR: odds ratio; CI: confidence interval; BMI: body mass index; CCI: Elixhauser Comorbidity Index.

Table 3: ED Visits in 30 Days after Primary Hip Arthroscopy

Variable	N	Total	%	OR	95% CI	P-value
Total	3,383	151	5.65%			
No SDOH	3,383	151	4.79%			
Age						
<20	67	23	6.61%	1.38	0.81-2.29	0.225
20-29	1,000	48	5.61%			
30-39	1,000	112	6.47%	0.98	0.69-1.41	0.898
40-49	1,000	122	12.2%	0.63	0.44-0.91	0.013
50-59	1,000	48	3.77%	0.65	0.30-0.69	0.001
60-69	1,000	18	4.95%	0.60	0.31-1.05	0.002
Sex						
Male	1,000	58	4.20%	0.83	0.61-1.10	0.201
Female	2,383	293	5.44%			
CCI score						
0	494	15	3.04%			
1-2	2,116	78	3.69%	0.97	0.80-1.17	0.823
3-4	1,000	74	7.36%	0.90	0.54-1.57	0.709
≥5	2,116	184	8.71%	2.19	1.33-3.56	0.001
Diabetes	1,332	38	2.81%	1.11	0.84-1.45	0.453
Obesity	2,116	98	4.68%	1.21	0.95-1.55	0.124
Tobacco	2,116	108	4.79%	1.32	1.05-1.65	0.019

Numbers and percentages of patients experiencing 30-day ED visits are depicted, along with odds ratios (ORs), 95% confidence intervals (CIs), and P-values for significant associations with SDOH. Bold indicates reference category for multivariate logistic regression analysis. OR: odds ratio; CI: confidence interval; CCI: Elixhauser Comorbidity Index; SDOH, social determinants of health.