

Barriers to Healthcare Utilization and Access to Care in Patients with Hip Osteoarthritis

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INTRODUCTION:

Treatments for hip osteoarthritis can be expensive and lead to significant financial burden on patients. Although the prevalence of hip osteoarthritis continues to increase, there remains little data regarding the prevalence of barriers to obtaining appropriate treatment. The purpose of this study was to evaluate and characterize the impact of hip osteoarthritis diagnosis, hip arthroplasty, and patient-specific factors on access to health care.

METHODS:

This retrospective cohort study was conducted using the All of Us database, a national database run by the National Institutes of Health (NIH) that measures various health outcomes through self-report surveys. All patients diagnosed with hip osteoarthritis between May 2018 and April 2023 were identified using Systematized Nomenclature of Medicine (SNOMED) clinical terms. These patients were propensity matched to a control group without a diagnosis of hip osteoarthritis based on sex, age, race, physical health, and mental health. The impact of hip osteoarthritis and patient demographic variables on self-reported access to care outcomes were analyzed. Statistical tests included univariate and multivariable regression.

RESULTS:

A total of 6,220 patients with hip osteoarthritis were included and matched to 6,220 controls (Table 1). Among patients with hip osteoarthritis, 25.9% had delayed care, 23.7% could not afford care, 12.2% had skipped medications due to financial constraints, and 1.6% had gone over one year since seeing a provider. Compared to controls, patients with hip osteoarthritis were less likely to have had over one year since last provider visit (1.6% vs. 3.3%, $p < 0.001$). No differences existed between groups in delaying care, inability to afford care, and skipping medications (Table 2). On multivariable analysis, prior total hip arthroplasty was not associated with inaccessibility to care. Income $< \$50,000$ ($p < 0.001$), older age ($p < 0.001$), female sex ($p < 0.001$), non-college education ($p = 0.01$), worse physical health ($p < 0.001$), and worse mental health ($p < 0.001$) were associated with increased rates of not being able to access care (Table 3).

DISCUSSION AND CONCLUSION:

Over a quarter of patients with hip osteoarthritis exhibit barriers to accessing health care. Specifically, income $< \$50,000$, older age, female sex, lack of a college education, worse physical health, and worse mental health are specific patient variables potentially associated with increased risk of being unable to access treatment. Surgeons should remain aware of these specific variables when treating patients to identify patients who may have barriers in accessing health care. Further research is necessary to identify specific interventions and screening assessments to better understand and mitigate these discrepancies among these patients.

Table 1: Patient demographics of matched hip osteoarthritis and control cohorts

Demographics	No Osteoarthritis (n=6,220)	Osteoarthritis (n=6,220)	Total (n=12,440)	p-value
Age				0.99 (1)
Mean (SD)	69.2 (10.6)	69.2 (10.6)	69.2 (10.6)	
Range	22.8 - 90.5	22.9 - 90.4	22.8 - 90.4	
Sex at birth				1.00 (2)
Female	3496 (56.1%)	3496 (56.1%)	8100 (65.1%)	
Male	2170 (34.9%)	2170 (34.9%)	4340 (34.9%)	
Race				<0.001* (2)
Asian	129 (2.1%)	54 (0.9%)	183 (1.5%)	
Black or African American	630 (10.1%)	792 (12.7%)	1422 (11.4%)	
Multi-racial	77 (1.2%)	79 (1.3%)	156 (1.3%)	
White	5305 (85.3%)	5207 (83.7%)	10512 (84.5%)	
Ethnicity				0.10 (2)
Hispanic or Latino	101 (1.7%)	56 (0.9%)	164 (1.3%)	
Not Hispanic or Latino	5664 (97.3%)	5702 (97.9%)	12157 (97.7%)	
Income				0.09 (2)
>200k	562 (9.0%)	507 (8.2%)	1069 (8.6%)	
100k-200k	1408 (22.6%)	1337 (21.5%)	2745 (22.1%)	
50k-100k	1695 (27.3%)	1609 (26.2%)	3304 (26.7%)	
0-50k	1837 (29.5%)	1855 (30.3%)	3722 (29.9%)	
Education				0.001* (2)
College graduate or advanced degree	3866 (62.2%)	3734 (60.0%)	7600 (61.1%)	
College but did not finish	1553 (25.0%)	1655 (26.6%)	3208 (25.8%)	
High school graduate or GED	647 (10.4%)	665 (10.7%)	1312 (10.5%)	
Less than a high school degree	111 (1.8%)	109 (1.8%)	220 (1.8%)	

(1) - Kruskal Wallis H Test

(2) - Pearson's Chi Squared

* indicates p-value < 0.05

Table 2: Univariate and multivariable analysis of hip osteoarthritis as a predictor of access to care

Univariable analysis	No Osteoarthritis (n=6,220)	Osteoarthritis (n=6,220)	Total (n=12,440)	OR	95% CI lower	95% CI upper	p-value
Delayed care	1608 (25.9%)	1614 (25.9%)	3222 (25.9%)	1.00	0.93	1.09	0.96
Could not afford	1499 (24.1%)	1472 (23.7%)	2971 (23.9%)	1.00	0.92	1.09	0.84
Skipped medication	769 (12.4%)	731 (11.7%)	1500 (11.7%)	1.07	0.96	1.19	0.24
>1 year since provider	201 (3.2%)	191 (3.1%)	392 (3.1%)	0.47	0.37	0.61	<0.001*
Multivariable analysis							
Delayed care	1608 (25.9%)	1614 (25.9%)	3222 (25.9%)	1.00	0.92	1.10	0.95
Could not afford	1499 (24.1%)	1472 (23.7%)	2971 (23.9%)	0.98	0.90	1.09	0.73
Skipped medication	769 (12.4%)	731 (11.7%)	1500 (11.7%)	1.08	0.95	1.22	0.24
>1 year since provider	201 (3.2%)	191 (3.1%)	392 (3.1%)	0.47	0.37	0.61	<0.001*

* indicates p-value < 0.05

Table 3: Multivariable analysis of total hip arthroplasty and demographic characteristics associated with access to care in patients with hip osteoarthritis

Variable	OR	95% CI lower	95% CI upper	p-value
Delayed care	1.00			
Total hip arthroplasty	0.97	0.89	1.07	0.60
Age	0.97	0.95	0.99	<0.001*
Male sex	0.97	0.95	0.99	<0.001*
White race	0.98	0.93	1.03	0.45
Black race	0.79	0.53	1.17	0.22
Hispanic race	0.99	0.47	1.68	0.75
Income < \$50,000	1.45	1.19	1.78	<0.001*
Income \$50,000 to \$100,000	0.95	0.79	1.17	0.61
Income > \$100,000	0.71	0.47	0.99	<0.001*
Education < college	0.97	0.92	1.02	0.06
Education high school	0.99	0.28	0.99	0.91*
Education > high school	0.41	0.20	0.83	<0.001*
No partner	1.00	0.96	1.04	0.69
Severity not between	1.11	0.89	1.39	0.34
PROXIS Physical	0.76	0.70	0.82	<0.001*
PROXIS Mental	0.77	0.72	0.83	<0.001*
Could not afford care	1.00			
Total hip arthroplasty	0.99	0.82	1.21	0.99
Age	0.96	0.95	0.97	<0.001*
Male sex	0.97	0.96	0.98	<0.001*
White race	0.98	0.93	1.03	0.45
Black race	1.00	0.72	1.47	0.98
Income < \$50,000	1.90	1.19	2.94	<0.001*
Income \$50,000 to \$100,000	0.94	0.79	1.17	0.56
Income > \$100,000	0.66	0.39	0.99	<0.001*
Education < college	1.01	0.91	1.09	0.14
Education high school	1.01	0.74	1.62	0.65
No partner	1.14	0.99	1.32	0.07
Severity not between	1.14	0.96	1.42	0.28
PROXIS Physical	0.69	0.64	0.75	<0.001*
PROXIS Mental	0.67	0.70	0.65	<0.001*
Skipped medication	1.01			
Total hip arthroplasty	0.97	0.79	1.10	0.64
Age	0.97	0.96	0.98	<0.001*
Male sex	0.98	0.97	0.92	<0.001*
White race	1.01	0.97	1.09	0.99
Black race	1.06	0.69	1.64	0.76
Income < \$50,000	1.59	1.23	2.07	<0.001*
Income \$50,000 to \$100,000	0.96	0.74	1.30	0.90
Income > \$100,000	0.58	0.42	0.79	<0.001*
Education < college	1.07	1.04	1.07	0.81*
Education high school	1.01	0.89	1.17	0.13
No partner	0.94	0.79	1.13	0.55
Severity not between	1.17	0.99	1.50	0.24
PROXIS Physical	0.68	0.61	0.76	<0.001*
PROXIS Mental	0.69	0.61	0.80	0.81*
Did not see provider	1.00			
Total hip arthroplasty	0.81	0.42	1.56	0.53
Age	0.97	0.96	0.99	<0.001*
Male sex	1.07	0.92	1.44	0.21
Black race	2.17	0.64	7.36	0.21
PROXIS Physical	1.40	1.19	1.74	<0.001*

* indicates p-value < 0.05

PROXIS - patient-reported outcomes commonwealth infrastructure system

Note: only variables significant on our univariate analysis were included in multivariable analysis for each domain.