

# Racial and Ethnic Disparities in Perceived Health and Barriers to Care Among Adults with Hip Osteoarthritis: A National Analysis of 16,000+ Patients from the All of Us Program

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## INTRODUCTION:

Hip osteoarthritis (OA) is a leading cause of disability among older adults, yet disparities in health outcomes and access to care remain understudied. Emerging evidence suggests that social determinants—such as income, education, and insurance status—along with perceptual barriers related to provider trust and communication may disproportionately affect minority patients. This study leveraged the All of Us Research Program, a nationally representative cohort, to evaluate racial and ethnic disparities in self-reported health, healthcare access, and perceived barriers among adults with hip OA.

## METHODS:

We performed a cross-sectional analysis using data from the All of Us Research Program (v8 Controlled Tier, February 2024). Adults aged ≥18 years with a diagnosis of hip OA and available demographic and survey data were included (n=16,743). Patients were stratified into Black (n=3,545), Hispanic (n=1,637), and White (n=11,561) groups. Outcomes included general, mental, physical, and social health status; provider communication; and barriers to care such as cost, insurance, transportation, and access to specialists. Between-group comparisons were made using Chi-square tests.

## RESULTS:

Black and Hispanic patients were more likely than White patients to be younger, female, have lower education and income levels, and rely on Medicaid (all p<0.001). These groups reported significantly higher barriers to care, including unaffordable deductibles, difficulty accessing follow-up, insurance coverage issues, and transportation challenges (all p<0.001). They were also more likely to skip medications due to cost and report lower provider respect, trust, and communication. Across all domains—general, mental, physical, and social health—minority groups reported significantly poorer outcomes and greater emotional distress compared to White patients (all p<0.001).

**DISCUSSION AND CONCLUSION:** Substantial racial and ethnic disparities persist in both structural and perceptual barriers to care among adults with hip OA. Black and Hispanic patients reported worse self-rated health and greater challenges in affordability, access, and provider communication. These findings underscore the need for culturally sensitive, system-level interventions that target modifiable barriers—including insurance access, transportation, and provider engagement—to promote equitable outcomes in osteoarthritis management.

Table 1. Demographic Data for the Study Population

Category	Black (n=3,545)	Hispanic (n=1,637)	White (n=11,561)	P-value
<b>Age (years)</b>				
18-24	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
25-34	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
35-44	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
45-54	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
55-64	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
65-74	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
75-84	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
85+	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
<b>Gender</b>				
Female	2,125 (59.9%)	1,000 (61.1%)	7,500 (64.9%)	<0.001
Male	1,420 (39.9%)	637 (38.9%)	4,061 (35.1%)	<0.001
<b>Ethnicity</b>				
Non-Hispanic Black	3,545 (100%)	0 (0%)	0 (0%)	<0.001
Hispanic or Latino	0 (0%)	1,637 (100%)	0 (0%)	<0.001
Non-Hispanic White	0 (0%)	0 (0%)	11,561 (100%)	<0.001
<b>Insurance</b>				
Medicaid	2,125 (59.9%)	1,000 (61.1%)	7,500 (64.9%)	<0.001
Medicare	1,420 (39.9%)	637 (38.9%)	4,061 (35.1%)	<0.001
Private	0 (0%)	0 (0%)	0 (0%)	<0.001
Uninsured	0 (0%)	0 (0%)	0 (0%)	<0.001
<b>Education</b>				
Less than high school	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
High school graduate	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
Some college	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
College graduate	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
Postgraduate	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
<b>Income</b>				
< \$15,000	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$15,000 - \$24,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$25,000 - \$34,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$35,000 - \$44,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$45,000 - \$54,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$55,000 - \$64,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$65,000 - \$74,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$75,000 - \$84,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$85,000 - \$94,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$95,000 - \$104,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$105,000 - \$114,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$115,000 - \$124,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$125,000 - \$134,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$135,000 - \$144,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$145,000 - \$154,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$155,000 - \$164,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$165,000 - \$174,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$175,000 - \$184,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$185,000 - \$194,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$195,000 - \$204,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$205,000 - \$214,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$215,000 - \$224,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$225,000 - \$234,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$235,000 - \$244,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$245,000 - \$254,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$255,000 - \$264,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$265,000 - \$274,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$275,000 - \$284,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$285,000 - \$294,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$295,000 - \$304,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$305,000 - \$314,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$315,000 - \$324,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$325,000 - \$334,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$335,000 - \$344,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$345,000 - \$354,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$355,000 - \$364,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$365,000 - \$374,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$375,000 - \$384,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$385,000 - \$394,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$395,000 - \$404,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$405,000 - \$414,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$415,000 - \$424,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$425,000 - \$434,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$435,000 - \$444,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$445,000 - \$454,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$455,000 - \$464,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$465,000 - \$474,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$475,000 - \$484,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$485,000 - \$494,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$495,000 - \$504,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$505,000 - \$514,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$515,000 - \$524,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$525,000 - \$534,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$535,000 - \$544,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$545,000 - \$554,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$555,000 - \$564,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$565,000 - \$574,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$575,000 - \$584,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$585,000 - \$594,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$595,000 - \$604,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$605,000 - \$614,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$615,000 - \$624,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$625,000 - \$634,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$635,000 - \$644,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$645,000 - \$654,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$655,000 - \$664,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$665,000 - \$674,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$675,000 - \$684,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$685,000 - \$694,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$695,000 - \$704,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$705,000 - \$714,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$715,000 - \$724,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$725,000 - \$734,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$735,000 - \$744,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$745,000 - \$754,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$755,000 - \$764,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$765,000 - \$774,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$775,000 - \$784,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$785,000 - \$794,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$795,000 - \$804,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$805,000 - \$814,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$815,000 - \$824,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$825,000 - \$834,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$835,000 - \$844,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$845,000 - \$854,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$855,000 - \$864,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$865,000 - \$874,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$875,000 - \$884,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$885,000 - \$894,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$895,000 - \$904,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$905,000 - \$914,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$915,000 - \$924,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$925,000 - \$934,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$935,000 - \$944,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$945,000 - \$954,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$955,000 - \$964,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$965,000 - \$974,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$975,000 - \$984,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$985,000 - \$994,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$995,000 - \$1,004,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$1,005,000 - \$1,014,999	1,250 (35.0%)	1,250 (76.3%)	1,250 (10.8%)	<0.001
\$1,015,000 - \$1,024,999				