## Unequal Access: Racial and Ethnic Disparities in Access to Healthcare for Patients with Osteoarthritis

Camryn Sumwalt Payne<sup>1</sup>, Alex Miguel Holle, Paul Ryan Van Schuyver, Joshua Bingham

## <sup>1</sup>Mayo Clinic Alix School of Medicine

INTRODUCTION: Osteoarthritis (OA) is a debilitating condition that negatively impacts patients' quality of life. Women of color and those of low socioeconomic status are less likely to benefit from early treatment and are more likely to develop severe symptoms related to OA. While early diagnosis and initiation of nonoperative treatments can manage patients' symptoms, progression of the disease can result in the need for a joint replacement. These disparities underscore the need to identify specific, actionable factors that prevent access to treatment among racial and ethnic minorities with OA. Thus, the purpose of this study was to utilize the Healthcare Access and Utilization Survey data from the All of Us Research Program to identify barriers to care for Hispanic and Black adults with hip, knee, and shoulder OA.

METHODS: This study was exempt from Institutional Review Board approval. A cross-sectional study of "Healthcare Access and Utilization Survey" data collected by the All of Us database was conducted. This database is sponsored by the National Institutes of Health and includes participants from different races, ethnicities, and socioeconomic statuses (SES), aiming to reflect the true diversity of the United States (US) population. Patients with a diagnosis of knee, hip, or shoulder arthritis who completed the survey were included. Patients were categorized into the following groups based on self-reported race and ethnicity; Hispanic, Black, and Non-Hispanic White. Demographic variables including age, gender, income, insurance status, employment status, and education level were compared between groups. Multivariable logistic regressions controlling for demographic variables and SES factors were performed to identify barriers to care among ethnic and racial minorities.

## **RESULTS**:

The mean age of Hispanic-identifying patients receiving care for OA was 62.5 years, which is significantly younger than that of non-Hispanic patients (p<0.001). Hispanics were significantly less likely to be insured or have a college degree when compared to their non-Hispanic counterparts (p<0.001) [Table 1]. Hispanic patients were significantly more likely to delay care due to difficulties taking time off work (OR: 1.75; 95% CI: 0.98-2.96; p=0.047), less likely to receive specialty care (OR: 1.6; 95% CI: 1.06-2.49; p=0.032), more likely to be unable to afford prescription medications (OR: 1.57; 95% CI: 1.03-2.35; p=0.03), more likely to skip medications to save money (OR: 1.69; 95% CI 1.02-2.68; p=0.032), and more likely to report that the provider had not treated them with respect (OR: 0.66; 95% CI: 0.48-0.95; p=0.023) [Table 3].

Black patients were significantly more likely to have delays in care due to issues with transportation (OR: 1.58; 95% CI: 1.30-1.93; p<0.001) and were less likely to have received care from General Practitioners (GPs) (OR: 1.96; 95% CI: 1.45-2.70; p<0.001), but more likely to have received care from Specialists (OR: 0.65; 95% CI: 0.57-0.75; p<0.001). Black patients were also more likely to be unable to afford follow-up care (OR: 1.45; 95% CI: 1.12-1.81; p=0.001) or prescription medications (OR: 1.26; 95% CI: 1.07-1.49; p=0.005) [Table 4].

## DISCUSSION AND CONCLUSION:

Factors contributing to undertreatment and delays in care for OA vary across racial and ethnic minority groups. Hispanic patients were more likely to receive care at a younger age than non-Hispanic patients while simultaneously experiencing greater barriers to accessing care. Social determinants of health (SDOH) such as working more physically demanding jobs or having less access to preventive care to manage milder symptoms could lead to more severe disease manifestations. These SDOH may also help explain why Hispanic patients had less flexibility to take time off work for medical attention, limited access to Spanish-speaking providers when necessary, and lower rates of insurance.

Black patients experienced significantly more barriers to accessing care for OA, likely also due to SDOH. Structural systems of segregation and mistrust in the healthcare system may limit the ability for these patients to access providers that they feel can safely manage their condition. These SDOH have created and perpetuated barriers to OA management or total joint replacement. Black patients may be more likely to see specialists while being less likely to see GPs because they are unable to seek medical attention until their disease has progressed to the point of needing specialty care.

Hispanic and Black (	DA patients	experience increa	ased barriers to care. It	is crucial for providers to	understand the
disparities their patier	nts experiend	ce to ensure the	y have the resources to	receive early intervention a	and longitudinal
treatment	for	а	potentially	debilitating	condition.
Table 1. Demographics of Osteoarthritis Patients by Ethnic Group	Table 2. Demographics of Os	teoarthritis Patients by Racial Group	Table 3. Multivariable Analysis of Barriers to Care for Osteoarthritis Patients by Ethnic	Table 4. Multivariable Analysis of Barriers to Care for Osteourthritis Patients by Racial	

														•			-							-			
Table 1. Demographics of Osteoarthritis Patients by Ethnic Group					Table 2. Demographics of Osteoarthritis Patients by Racial Group						Table 3. Multivariable Analysis of Barriers to Care for Osteoarthritis Patients by Ethnic							Table 4. Multivariable Analysis of Barriers to Care for Osteoarthritis Patients by Racial									
			ISPANIC (n = 777)NON-H						TOTAL	WHITE (n = 13,484)	BLACK (n = 1451)	P-value	1	group							Group						
		69.2 (10.6) 6	2.5 (11.2) 69.6 (1	10.5)	<0.001			AGE (SD)	69.7 (10.5)	65.2 (11.2)	70.1 (10.4)	<0.001	1	Delayed Care	Control Da	interio de	Voe-Bloosek 08	55N CI	2.unhat	7	Delayed Care	Total	white	#lack	OR	95% CI	P-solue
	Male	5,624	248	5376				Male	5 3 3 8	5042	295		1	Transportation	827	62	235	1.30.76-2.1	4 0.3	2	Transportation	734	54	16 I	188		+0.001
Gende	r Female	10,282	547	9735	0.003		Gender	Female	9.597	8442		0.003		Time Off Work	667	65	602	1,75,0.98-2.9		7	Time Off Work	597	52	23	74	0.92 0.30-1.21	0.58
	White	13,484 126 13,358 1,451 21 1430			Hispanic or Latino	3,257	126	1,135	0.000	-	Couldn't Afford Care	732	60	672	1.44 0.83-2.3	8 0.1	7	Couldn't Afford Care	666	55	8 1	114	1 0.80-1.25	0.90			
	84ack		1 1				14.788		1430	0.082		Had To Pay Out Of Pocket	1624	100	1524	1.04[0.64-1.6		8	Hed To Pay Out Of Pocket	1510	133	51 1	179	0.86 0.72-1.03	0.098		
	Asian	166	56 2 164	1 1		Ethnicity	Not Hispanic or Latino		13,358	14.90	0.082	-	Defectible Tao High	820	59	761	1 0.54-1.7		2	Deductible Too High Fiderby Care	257	6	36 1		1.08 0.87-1.35	0.43	
Race	Other	790	631	159	<0.001			<\$0,000K	3,981	3263	718			Elderly Care	262	30	232	1.95 0.85-3.9	2 0.05	1	Elderly Care librar Net Harl Care in the Last Year	252	19	77	35	0.58 0.65-1.43	0.93
	<50.000K	4.364	375	3591		- 1		50,000-100,000	4,425	4101	324			Have Not Had Care in the Last Year						-	Several Practices	-				1.96 1.45-2.70	
	50.000-100.000	4.616	138	4478	1		Income	>100.000	4.915	4745	170	<0.001		General Practioner Severalist	832	47	785	0.92 0.51-1.8		8	Special Plachaser	774	- 72	e			<0.001
Incom	e >100,000	5.122	119	5003	<0.001			Ves	14.670	13285	1385		1	Specialist Physical Therapy	5395	207	3188	1.6 1.06-2.4		2	Specialite Physical Therapy	3154	1 271		415	0.86 0.75 0.99	40.001
	Tes	15,600	752	14848			Insurance	No	140	100	40	<0.001		Physical Interapy Could Not Afford Care	544	365	4974	0.880.61-1.2	3 0.4	9	Could Not Afford Care		904			0.0002.730.99	
Insuran	ce No	164	28	136	<0.001		indurance.	College Degree	9 3 9 1	8812	(20)	-0.001	-	Follow-up Care	677	78	108	1.58 0.91-2.6	1 0.05	-	Follow-up Care	601	47	70 1	125	145 1 12-1.01	0.001
	College Degree	9.847	281	4566					3,859		2)3			Prescription Medications	1412	144	1224	1.57 1.03-2.3		2	Prescription Medications	138	108	8 3	250	1.26 1.07-1.49	0.005
	Some College	4.126	261	3865	1			Some College		3355	504			Primary Care	493	64	433	1.63(0.87-2.8		1	Primary Care	434	33	100	26	1.52 1.17-1.95	0.003
	High School Graduate	1.522	117	1405	1			High School Graduate	1,404	1138	266			Specialist	864	20	774	1.45 0.87-2.3	4 0.1	3	Specialist	776	63	17 1	139	1.11 0.85-3.2	0.33
Educati	In Less than High School	262	119	143	<0.001			Less than High School	147	83	64	<0.001		Skipped Medications to Save Money	860	65	791	1.69 1.02-2.6		2	Skipped Medications to Save Money	788	66	52 1	126	0.56 0.77-1.18	0.63
	ent Employed	5.585	117	145	-0.001		Employment	Employed	5.217	4729	483		1	Patient Interaction						1	Patient Interaction			-	_		
Statu		10.189	400	9700	<0.001			Not employed	9.608	8672	936	<0.001		Provider Was Different From Me	1075	108	967	1.23 0.74-1.9		2	Provider Was Different From Me	982	80	01 1	187	1.85 1.12-1.61	0.003
	- parterproteo	10,189	467	9700	10.001			(instantion of the second seco	5/1051					Provider Did Not Treat Me With Respect	13502	579	11923	0.65 0.48-0.9	5 0.02	3	Provider Did Not Treat Me With Respect	2785	250	37 3	276	1.33 1.15-1.55	<0.001