

A decorative background featuring a grid of hexagons. Some hexagons are filled with light blue and contain white medical icons: a pill, a syringe, a first aid kit, a heart with an ECG line, a capsule, and a test tube. Other hexagons are empty or have a darker blue fill. The overall theme is medical and healthcare.

Racial Disparities In Advance Care Planning Among Elderly Patients with Chronic Kidney Disease (CKD)

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Background

- Approximately 14% of the Medicare population has CKD and rates of mortality are substantial among aging patients with more advanced CKD.
- Advance care planning (ACP) is a process in which clinicians elicit patients' goals and values and document their preferences for care if their health status worsens.
- Effective ACP also has been associated with greater patient satisfaction with care, greater hospice utilization, and lower rates of in-hospital death.
- End of life care is defined as-care given to people who are near the end of life and have stopped treatment to cure or control their disease. End-of-life care includes physical, emotional, social, and spiritual support for patients and their families.
- Black and Hispanic patients have a higher prevalence of CKD compared to other racial groups but they often engage less in ACP and receive more intense EOL care.
- Few studies have investigated advance care planning or end-of-life care among this population and none have examined racial differences in patients with non-dialysis dependent CKD.

Racial disparities in advance care planning in CKD

Table 1. Racial Differences in Advanced Care Planning Among Respondents with Stage 3,4,5 CKD

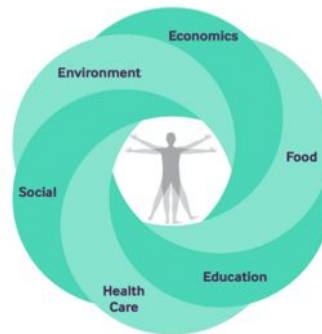
	White, non-Hispanic (N=221)	Black, Other, or Hispanic (N=89)	
Demographics		N (%)	p-value*
Age (Years)			
65-74	52 (17.3)	22(23.4)	0.0449
75-84	100(33.2)	39(41.5)	
85+	149(49.5)	33 (35.1)	
Gender			
Male	159(52.8)	44 (46.8)	0.3448
Female	108 (48.9)	53 (59.6)	
Education			
Less than high school	92 (30.6)	60(63.8)	<.0001
High school graduate	169 (56.1)	29 (30.9)	
College and above	40(13.3)	5(5.3)	
CKD Status			
Stage 3	135 (61.1)	54 (60.7)	0.76
Stage 4	60 (27.1)	22 (24.7)	
Stage 5	26 (11.8)	13 (14.6)	
Advanced Care Planning			
Had EOL instructions			
Yes	181(62)	23 (25)	<.0001
If yes, EOL instructions contain:			
All possible care		<10 respondents	0.01
Limit care	118 (92.9)	17 (89.5)	0.6
Withhold treatment	97 (78.9)	11 (57.9)	0.05
No intensive treatment	280(92.9)	69 (73.7)	0.01
Instructions applicable	107 (84.9)	16 (80)	0.57
Had durable power of attorney			
Yes	213 (72.9)	36 (39.6)	<.0001

Social Determinants of Health

Social determinants of health

- **Defined by the World Health Organization as:**
“The conditions in which people are born, grow, live, work and age.”
 - Income level
 - Educational opportunities
 - Occupation, employment status and workplace safety
 - Gender inequity
 - Racial segregation
 - Food insecurity
 - Access to housing/utility services
 - Early childhood experiences and development
 - Social support
 - Crime rates/exposure to violent behavior
 - Availability of transportation
 - Neighborhood conditions and physical environment
 - Access to clean water and air

Social Determinants of Health



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Research Objectives

- To investigate the social determinants of health that are correlated with racial disparities among patients with chronic kidney disease who are not treated with dialysis in possession of advance directives (living will and health care proxy form) and preferences for end-of-life care.
- To inform the design of a subsequent study to better understand variation in intensity of EOL care for patients with kidney disease.

Significance

- This project sheds light on overlooked social determinants of health that drive disparities in ACP utilization and intensity of Care
- This project may lead to improved healthcare outcomes for patients with CKD
- This project may inform subsequent research in other illness groups regarding disparities in advance care planning

Methods

Selection of Social Determinants

Selected Social Determinants of health that could be correlative with racial disparities.

Literature Review

Conducted a preliminary literature review on established Social Determinants of health that affect ACP including possession of advance directives preferences for EOL care - utilized PubMed to do this.

HRS and RAND

Used the RAND and HRS databases to locate previously used survey questions that were good proxies for the now established potentially correlative Social Determinants of Health.

Analysis of Racial Disparities

Established which variables showed significant racial disparities within the study Cohort.

Multivariable regression

Ran a multivariable regression using the survey questions to determine the degree of correlation



Selected Social Determinants of Health

- Health (quality of life/self-rated health/self-perceived/prognostic awareness)
- Healthcare relationships (trust of quality of care)
- Labor force (employment status)
- Economic status (annual income vs. financial difficulties/net worth/inheritance)
- Family structure/Family relationships (social support)
- Religious preferences/beliefs-(church attendance)
- Education level
- Language-(primary speaking)

HRS (The Health and Retirement Study)

The University of Michigan Health and Retirement Study (HRS) is a longitudinal panel study that surveys a representative sample of approximately 20,000 people in America, supported by the National Institute on Aging (NIA U01AG009740) and the Social Security Administration.

Final Survey Questions Chosen From The HRS Study

[illegible]

Snapshot of HRS

Content Area	2020	2018	2016	2014	2012	2010	2008	2006	2004	2002	2000	1998	1996	1995	1994	1993	1992
Table of Contents	-	-	-	-	-	-	-	-	-	-	TOC	TOC	-	TOC	-	TOC	
Preface	-	-	-	-	-	-	-	-	-	-	Preface	Preface	-	Summary	-	-	-
Preload	-	-	-	-	-	-	-	-	-	-	-	-	-	PRE	PRE	-	-
Coverscreen	A	A	A	A	A	A	A	A	A	A	CS	CS	CS	CS	CS	CS	CS
Demographics	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A
Health Status	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B
Health Care Utilization	N	N	N	N	N	N	N	N	N	N	E	E	E	E	B	E	-
Health Care Costs	N	N	N	N	N	N	N	N	N	N	E	E	E		B	E	-
Functional Limitations, ADL/IADL, Helpers	G	G	G	G	G	G	G	G	G	G	E	E	E	E	B	E	-
Cognition	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	C	L
Proxy Cognition	D	D	D	D	D	D	D	D	D	D	PC	PC	PC	PC	-	PC	-
Expectations	P	P	P	P	P	P	P	P	P	P	H	H	-	H	C	H	L
Family Structure	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	D	CS
Transfers	F	F	F	F	F	F	F	F	F	F	-	-	-	-	EE	-	E
Housing	H	H	H	H	H	H	H	H	H	H	F	F	F	F	D	F	D
Mortgage Crisis	H	H	H	H	W	W	W	-	-	-	-	-	-	-	-	-	-
Assets, Debts	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	J	J	J	J	K	K	M
Income	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	J	J	J	J	N	J	N
Capital Gains	R	R	R	R	R	R	R	R	R	R	N	N	N	N	V	-	-
Asset Verification	U	U	U	U	U	U	U	U	U	U	-	-	-	-	-	-	-
Current Job	J	J	J	J	J	J- Core I-Exit	J- Core I-Exit	J- Core I-Exit	J- Core I-Exit	J- Core I-Exit	G	G	G	G	F	G	F

Regression Results

<i>Variables</i>	<i>Category</i>	<i>Total</i>	<i>White, Non-Hispanic Mean (Std. Dev)</i>	<i>Black, Hispanic, Other Mean (Std. Dev)</i>	<i>P-value (2 sided)</i>
AGE AT DEATH	Continuous	395	83.99 (8.45)	81.47 (8.29)	0.0114*
NUMBER OF LIVING CHILDREN	Continuous	387	3.11 (2.01)	4.18 (3.32)	0.0045*
NUMBER OF LIVING SISTERS	Continuous	388	0.95 (1.16)	1.58 (1.57)	0.0005*
NUMBER OF LIVING BROTHERS	Continuous	388	0.71 (1.06)	1.21 (1.59)	0.0055*
NUMBER OF LIVING SIBLINGS	Continuous	388	1.65 (1.73)	2.79 (2.64)	0.0002*
NUMBER OF LIVING PARENTS	Continuous	385	0.01 (0.14)	0.02 (0.21)	0.7222
NUMBER OF HOUSEHOLD MEMBERS	Continuous	388	1.91 (0.96)	2.44 (1.50)	0.0018*
HOUSEHOLD INCOME	Continuous	388	42111.34 (37574.37)	21484.02 (22090.95)	<0.0001*
NET WORTH	Continuous	388	474529.3 (1273982)	102854.3 (234475.9)	<0.0001*
SUM OF ADL DIFFICULTIES	Continuous	388	1.42 (1.66)	1.65 (1.80)	0.2572
SUM OF 8 SELF-REPORTED HEALTH CONDITIONS	Continuous	388	3.85 (1.43)	3.85 (1.53)	0.9893

Regression Results

<i>Variables</i>	<i>Category</i>	<i>Total</i>	<i>Non-Hispanic, White N(%)</i>	<i>Black, Hispanic, Other N(%)</i>	<i>p-value chi (2 sided)</i>	<i>p-value fisher's (2 sided)</i>
Age Category	65-74 years	74	52(17.3)	22(23.4)	0.0486*	0.0449*
	75-84 years	139	100(33.2)	39(41.5)		
	85+	182	149(49.5)	33(35.1)		
Gender	Male	203	159(52.8)	44(46.8)	0.3084	0.3448
	Female	192	142(47.2)	50(53.2)		
Education Category	Less than HS				<0.0001*	<0.0001*
	HS grad/GED					
	College grad or abov					
Married	No	198	142(47.8)	56(61.5)	0.0219*	0.0232*
	Yes	190	155(52.2)	35(38.5)		
Had EOL Instructions	Yes	204	181(62)	23(25)	<0.0001*	<0.0001*
	No	180	111(38)	69(75)		
Wishes - for all possible measures	Yes				0.0438*	0.0665
To limit care	Yes				0.3105	0.3955
To withhold treatment	Yes	149	137(79.7)	12(54.5)	0.0086*	0.0144*
		45	35(20.3)	10(45.5)		
For no extensive treatment	Yes				0.0017*	0.0074*
EOL instructions applicable	Yes				0.5499	0.7719

Regression Result

Durable Power of Attorney	Yes	249	213(72.9)	36(39.6)	<0.0001*	<0.0001*
	No	134	79(27.1)	55(60.4)		
HRS High blood pressure	No				0.0928	0.0998
	Yes					
HRS Diabetes	No	217	182(61.3)	35(38.5)	0.0001*	0.0002*
	Yes	171	115(38.7)	56(61.5)		
HRS Cancer	No	264	190(64)	74(81.3)	0.0019*	0.0019*
	Yes	124	107(36)	17(18.7)		
HRS Lung disease	No	310	230(77.7)	80(87.9)	0.0329*	0.0355*
	Yes	77	66(22.3)	11(12.1)		
HRS Heart problems	No	135	92(31)	43(47.3)	0.0043*	0.0056*
	Yes	253	205(69)	48(52.7)		
HRS Stroke	No	265	207(69.7)	58(63.7)	0.285	0.3042
	Yes	123	90(30.3)	33(36.3)		

Regression Results

HRS Psychological problems	No	295	231(77.8)	64(70.3)	0.1453	0.161
	Yes	93	66(22.2)	27(29.7)		
HRS Arthritis	No	64	49(16.5)	15(16.5)	0.9973	1
	Yes	324	248(83.5)	76(83.5)		
Proxy interview	No	303	242(81.5)	61(67)	0.0036*	0.0056*
	Yes	85	55(18.5)	30(33)		
Self-reported health	Fair/Poor	244	181(60.9)	63(69.2)	0.1522	0.1731
	Good/Excellent	144	116(39.1)	28(30.8)		
Depression (CESD > 4)	No	314	242(84.6)	72(84.7)	0.9838	1
	Yes	57	44(15.4)	13(15.3)		
Likely to leave any inheritance					<0.0001*	<0.0001*
	Yes	226	202(78.9)	24(34.3)		
Likely to leave \$500,000 inheritance					0.002*	0.001*
	Yes					
Likely to leave \$100,000 inheritance					<0.0001*	<0.0001*
	Yes	123	113(39.8)	10(12.2)		
Likely to leave \$10,000 inheritance					<0.0001*	0.0001*
	Yes	208	177(62.1)	31(37.8)		
Currently working for pay					0.0804	0.1378
	Yes					

Regression Results

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Findings



- Established significant disparities in inheritance, educational attainment, and support system composition
- Established significant disparities in certain variables within the CKD Cohort; however, we did not find a substantial drop in the race coefficient when accounting for the selected proxy survey questions.
- This can be attributed to two points: (1) The CKD Cohort sample size was not sufficiently large and (2) there are outstanding social determinants which the HRS study is not able to account for.

Takeaways

- Preliminary reading is essential to the research process
- Your hypothesis will not always ring true
- Embrace the challenge of an independent project

