

**Thomas A. LaVeist, PhD
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My journey to discover why health disparities exist...

Imagine

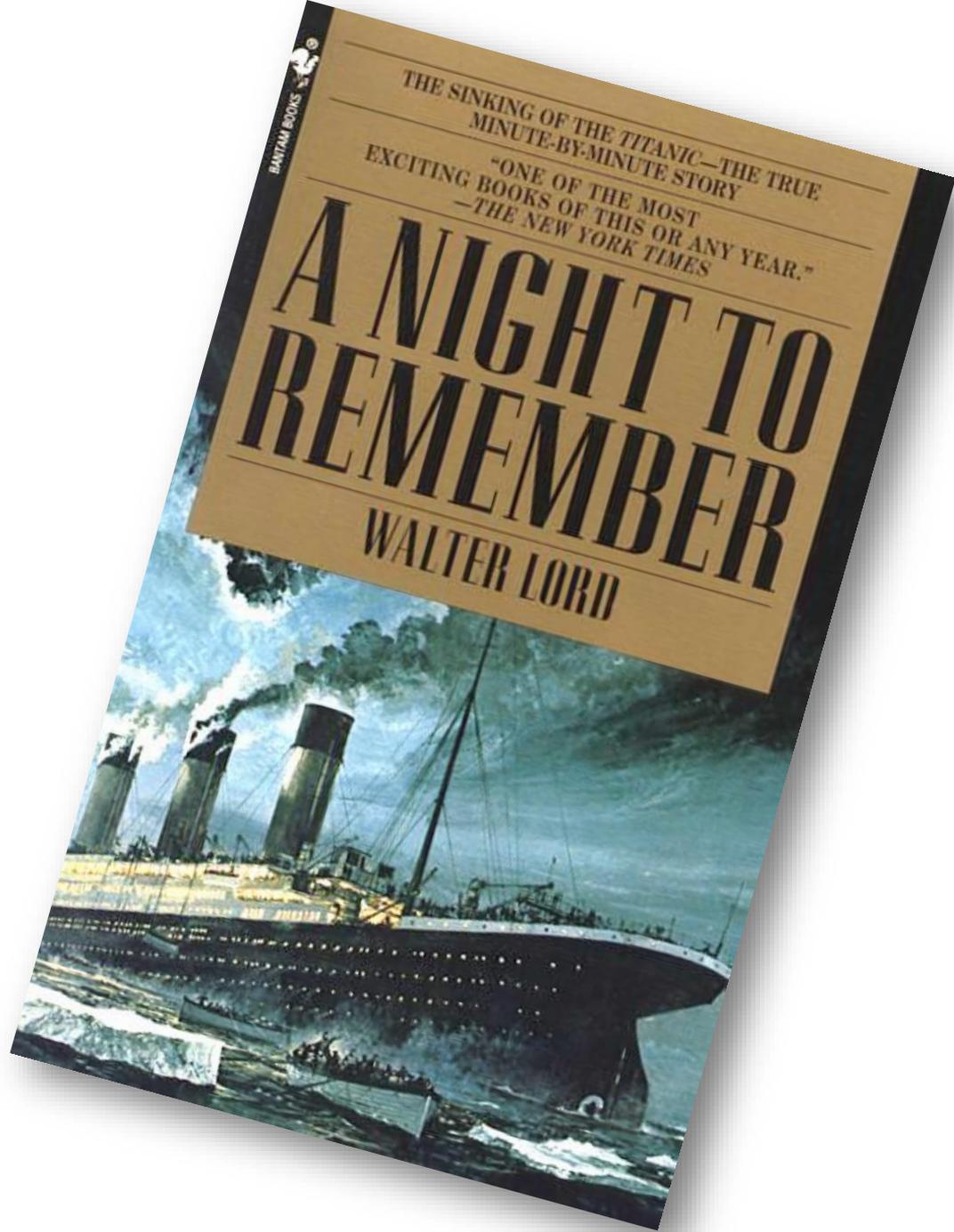
BANTAM BOOKS

THE SINKING OF THE *TITANIC*—THE TRUE
MINUTE-BY-MINUTE STORY

“ONE OF THE MOST
EXCITING BOOKS OF THIS OR ANY YEAR.”
—*THE NEW YORK TIMES*

A NIGHT TO REMEMBER

WALTER LORD



Survival status of female passengers of the Titanic by class of ticket

	Died	Lived	Total	% Died	% Lived
1 st class	4	139	143	2.8%	97.2%
2 nd class	15	78	93	16.1%	83.9%
3 rd class	81	98	179	45.3%	54.7%
Total	100	318	415	24.1%	76.6%

Source: Walter Lord (1955) "A Night to Remember" New York: Bantam Books, page 105

Who survived the Titanic?

- The Titanic's life boats could accommodate 53% of those onboard
- 2nd class females 5 times more likely to die
- 3rd class 16 times more likely to die

US Airways Hudson River landing January 15, 2009



coach class

first class

Why?

Popular Explanations for Race Disparities

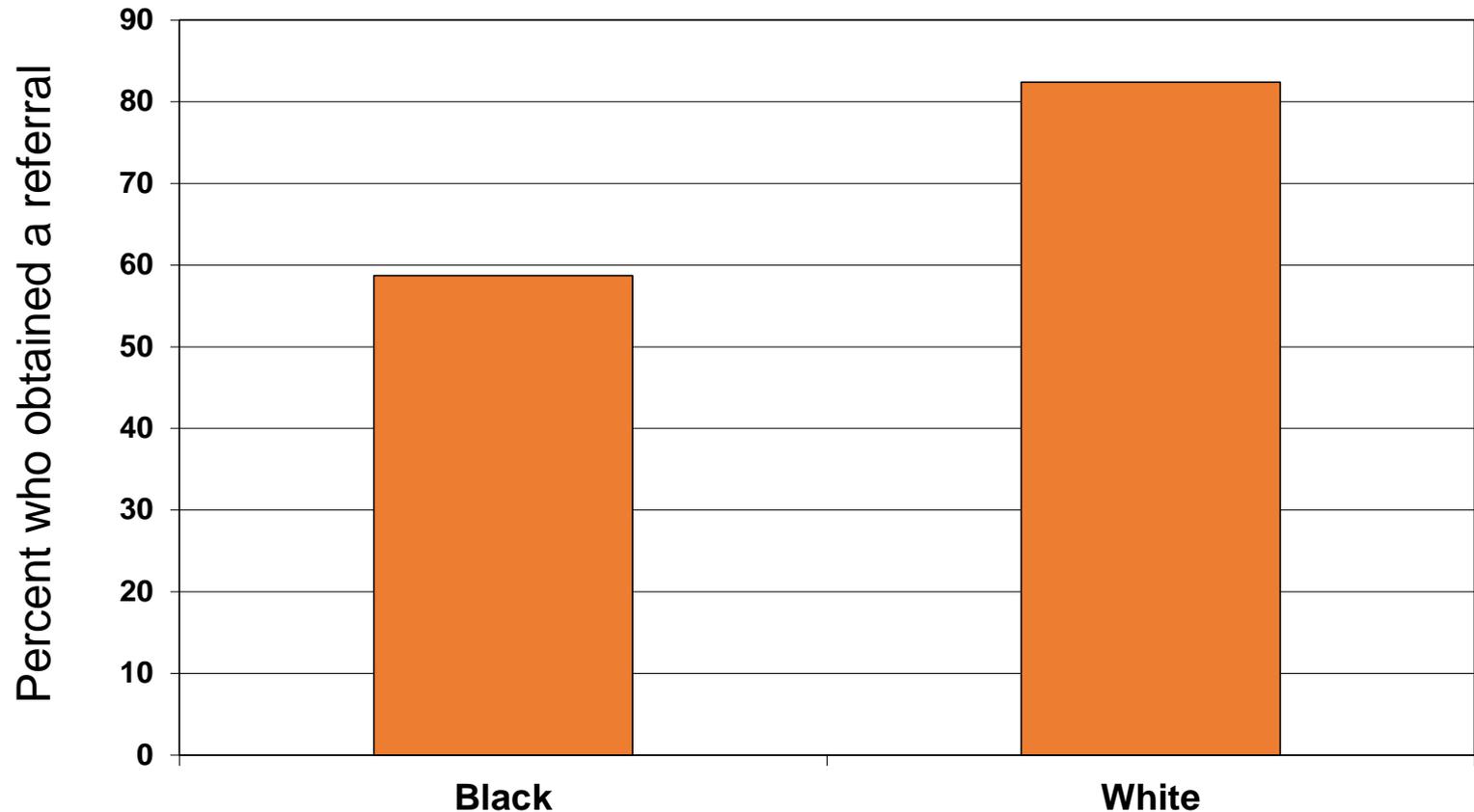
- Equal access to healthcare will solve the health disparities problem
- Disparities are caused by biological or genetic differences between groups
- Race disparities are caused by race differences in SES or poverty

Equal Access to Care



Healthcare Disparity

Studies of patients who were appropriate candidates for **coronary angiography** have found race differences in obtaining a referral for this diagnostic procedure.

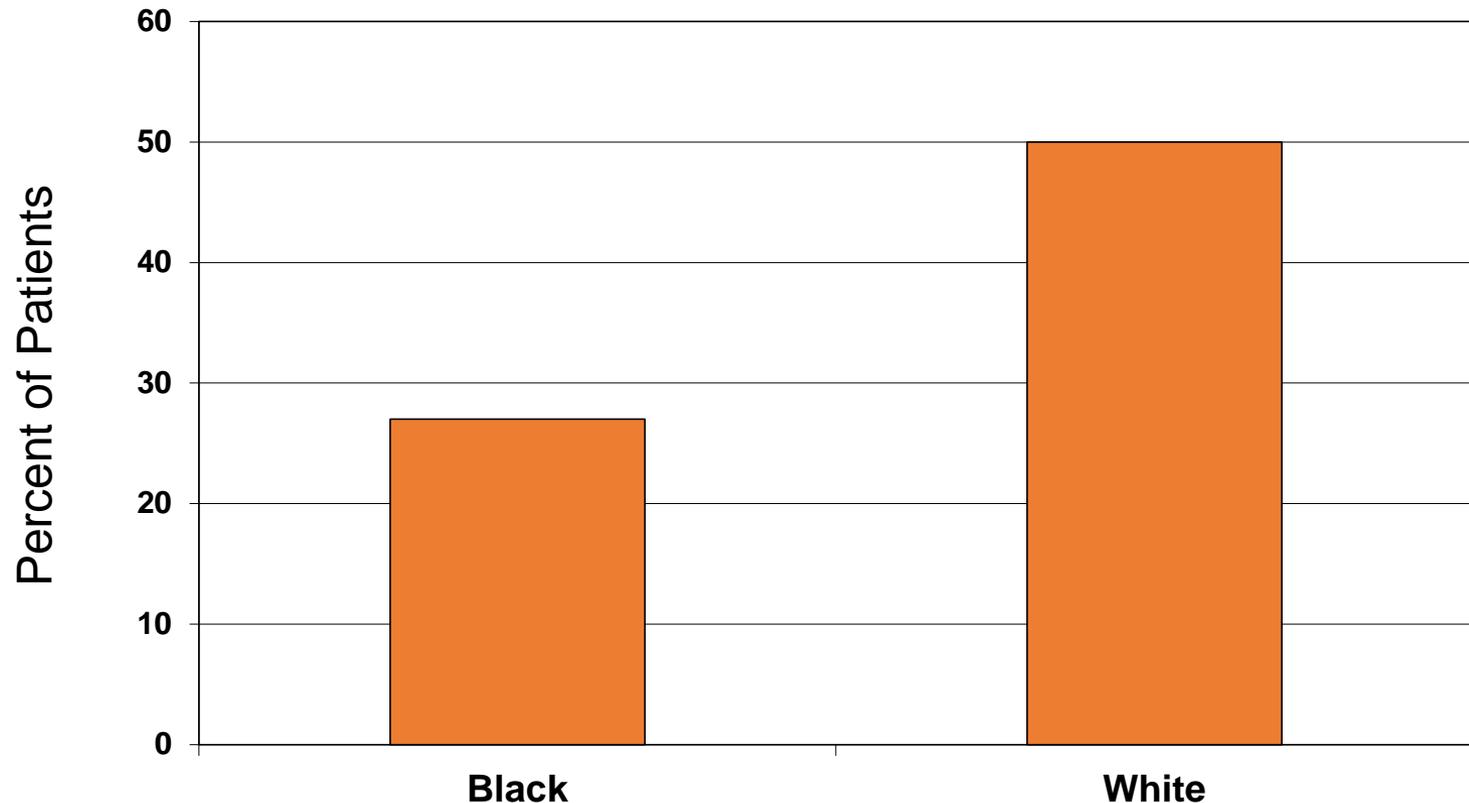


Source: LaVeist TA, Arthur M, Morgan A, Rubinstein M, Kinder J, Kinney LM, Plantholt S. The cardiac access longitudinal study. A study of access to invasive cardiology among African American and white patients. J Am Coll Cardiol. 2003 Apr 2;41(7):1159-66.



Healthcare Disparity

A race disparity in **coronary revascularization** was found among patients in the **Veteran Affairs** health system, where there are no race differences in ability to pay and providers are paid a salary.

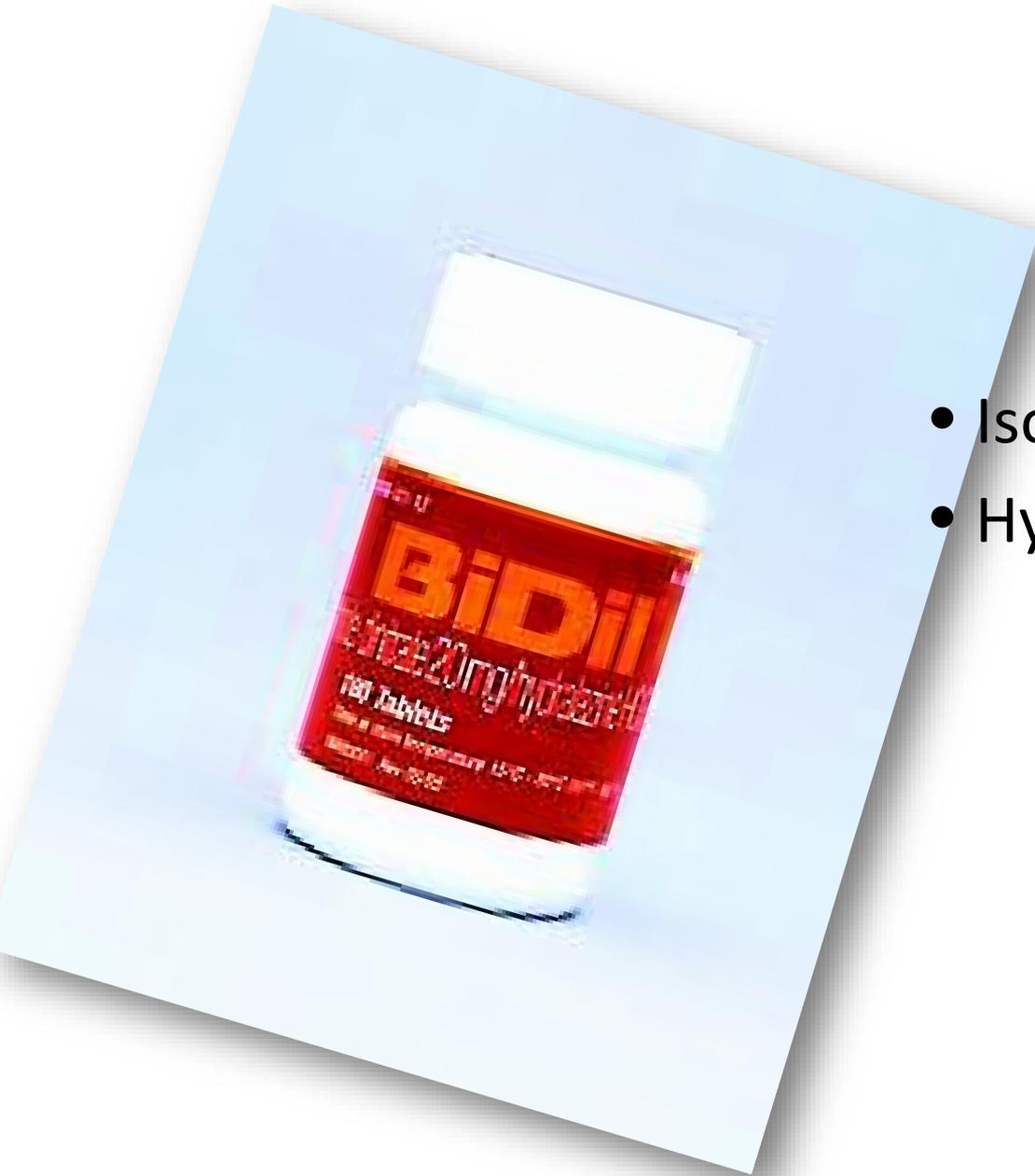


Source: Ibrahim SA, Whittle J, Bean-Mayberry B, Kelley ME, Good C, Conigliaro J. Racial/ethnic variations in physician recommendations for cardiac revascularization. Am J Public Health. 2003 Oct;93(10):1689-93.

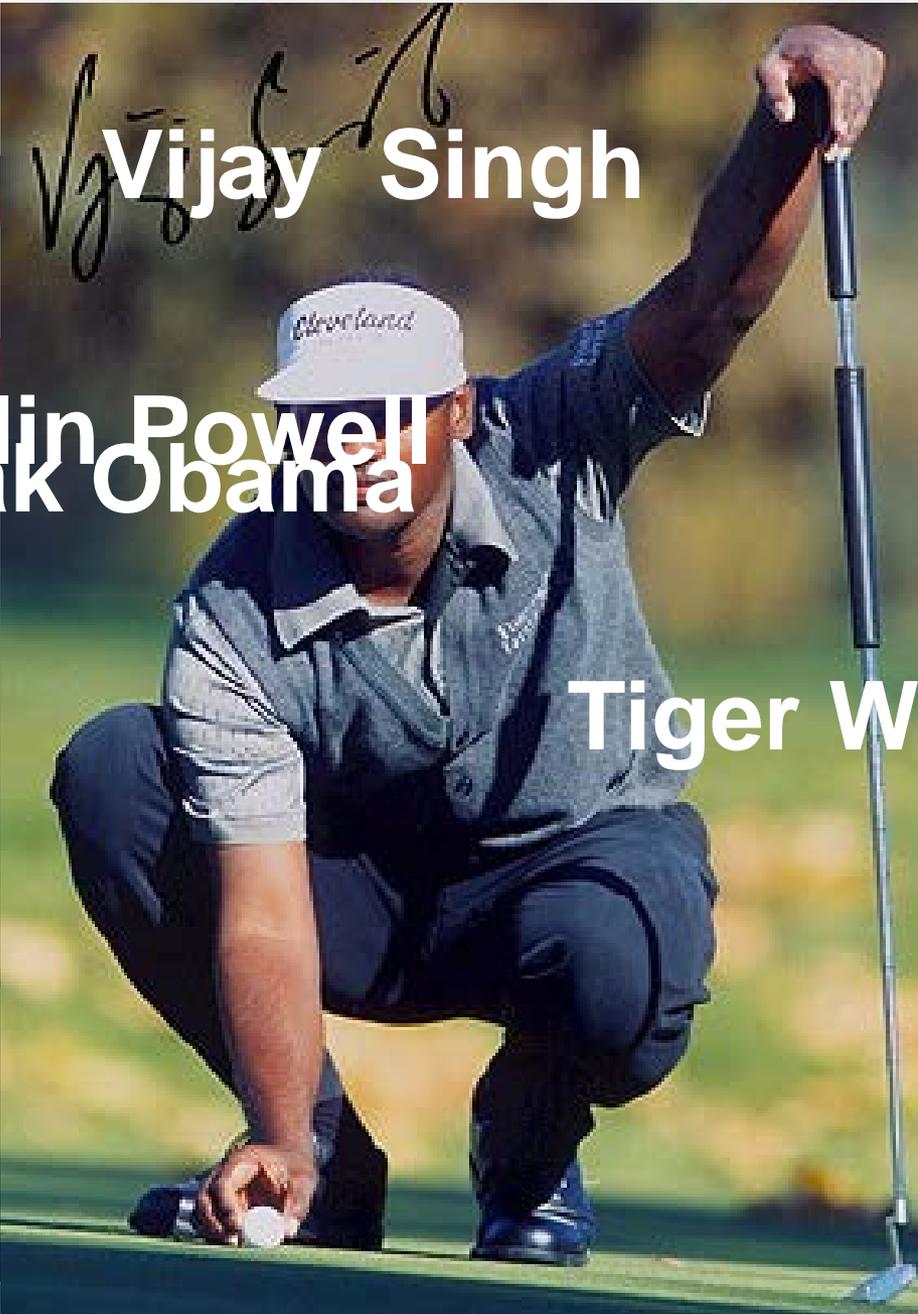
BAD GENES



“I’d Like to Go Straight But I’ve Got Crooked Genes.”



- Isosorbide Dinitrate
- Hydralazin Hcl

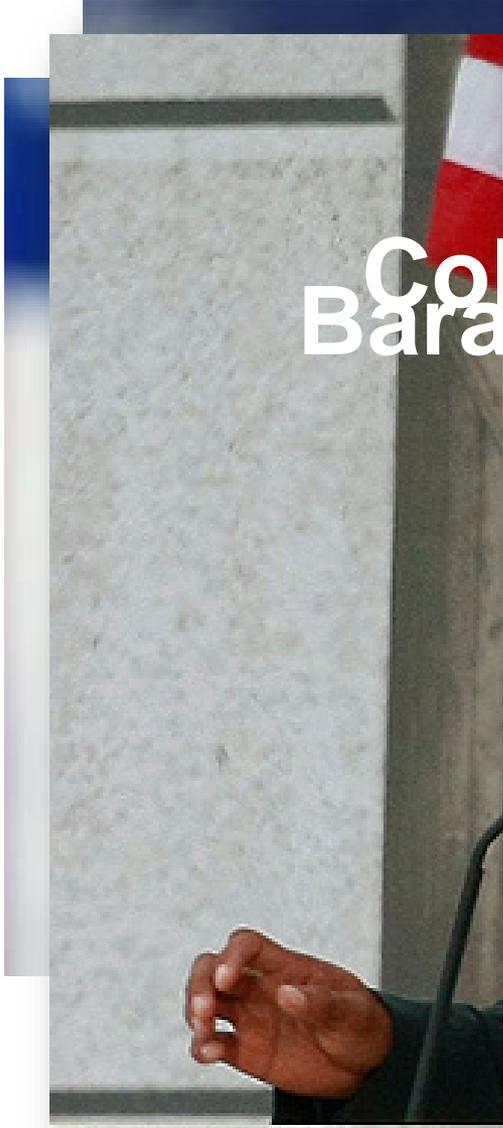


Vijay Singh

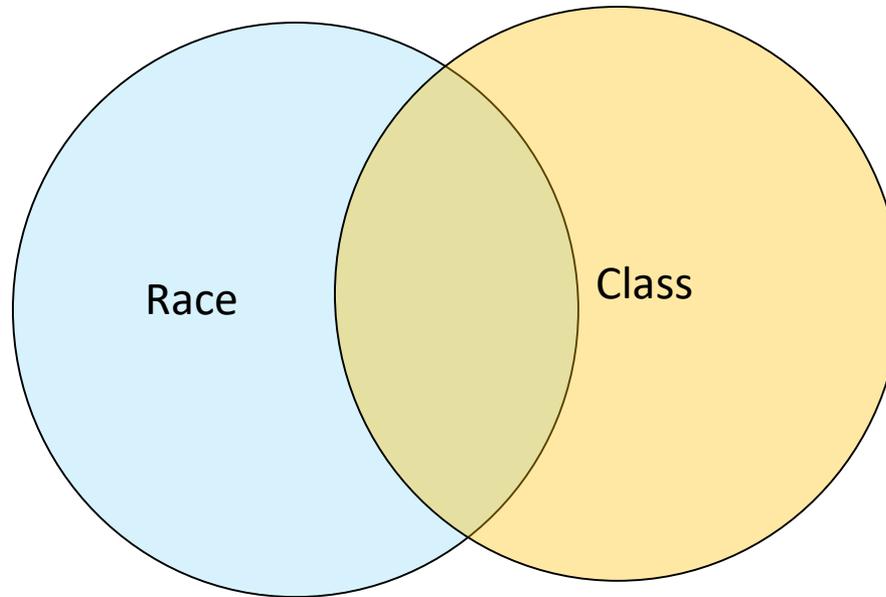
Vijay Singh

**Colin Powell
Barak Obama**

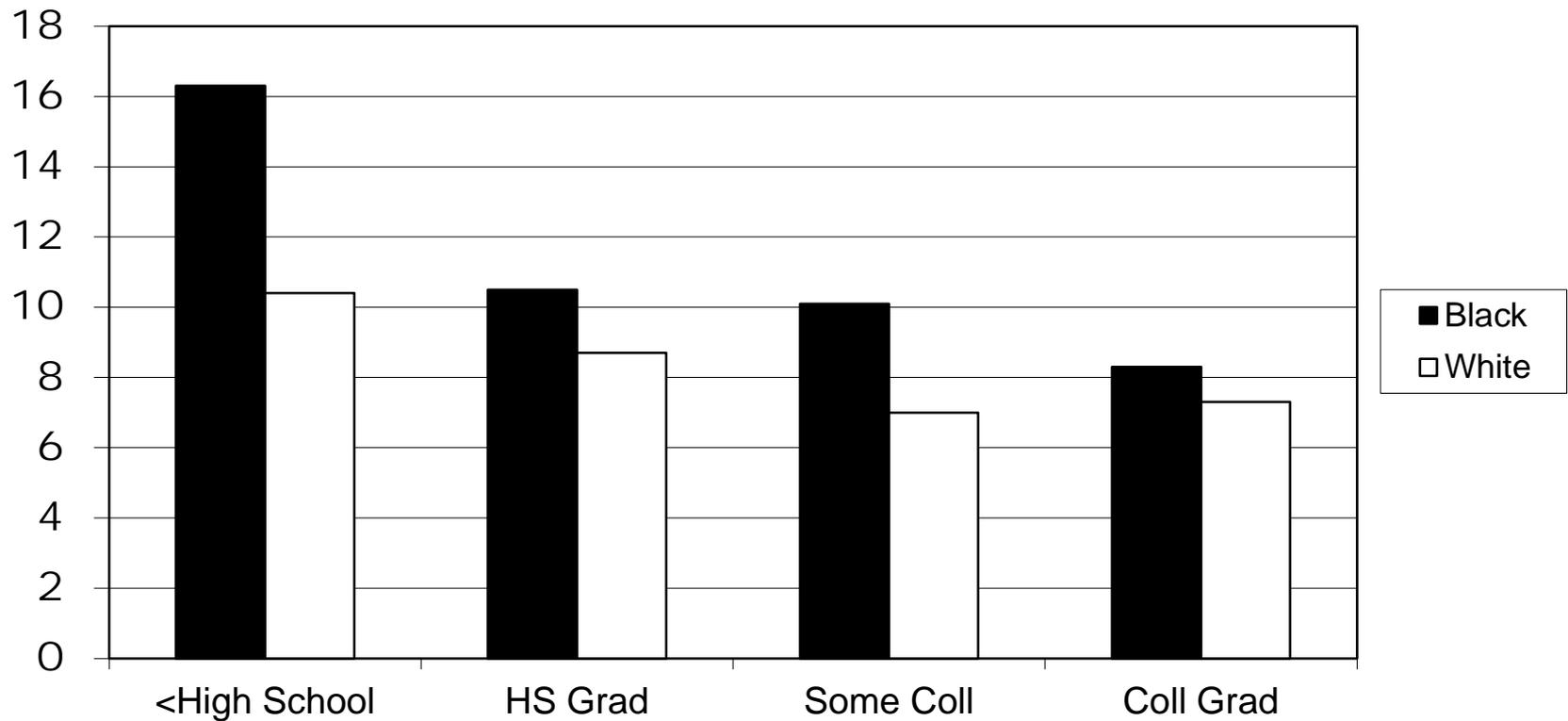
Tiger Woods



It's really income and not
race/ethnicity

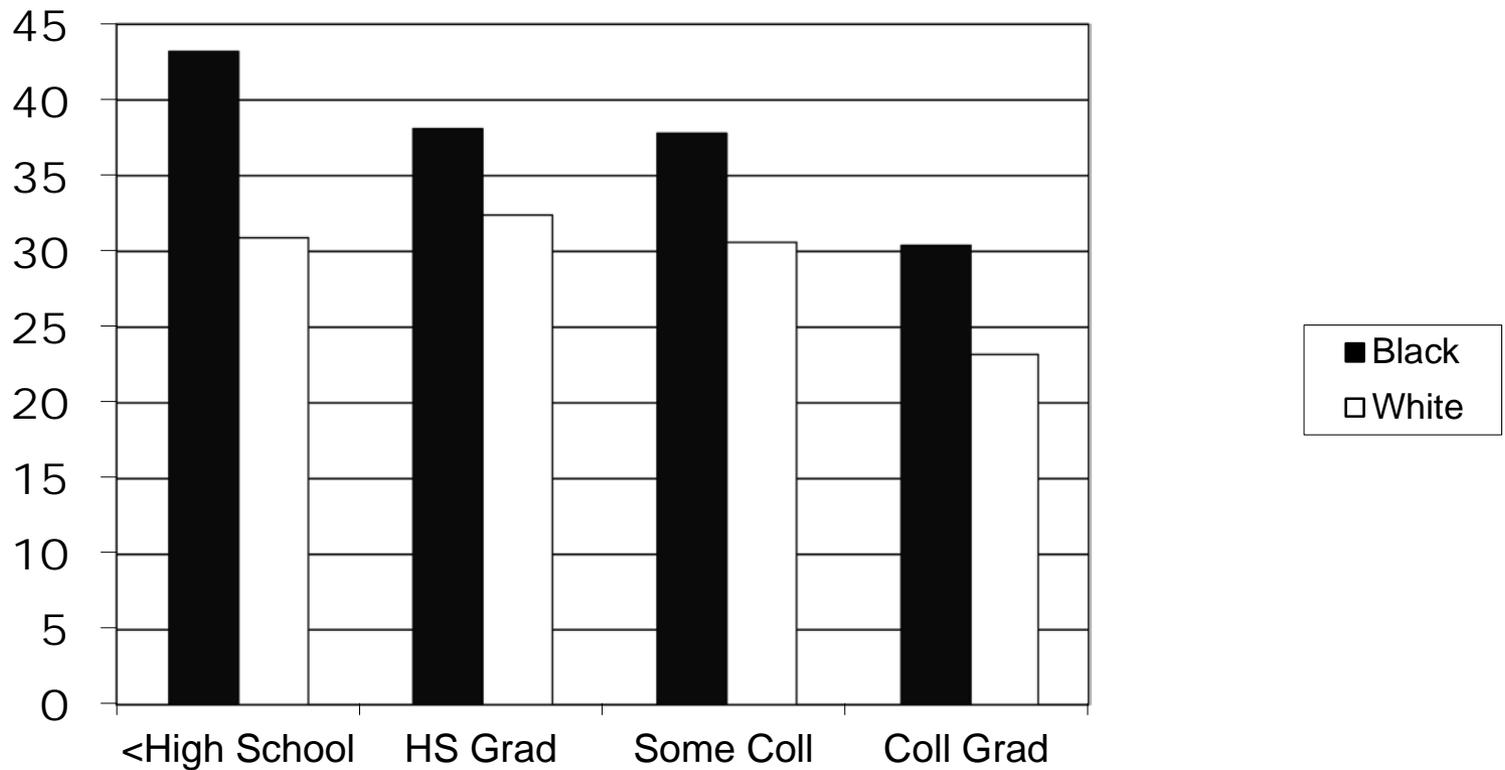


Education and Disparities in Diabetes, Age-Adjusted



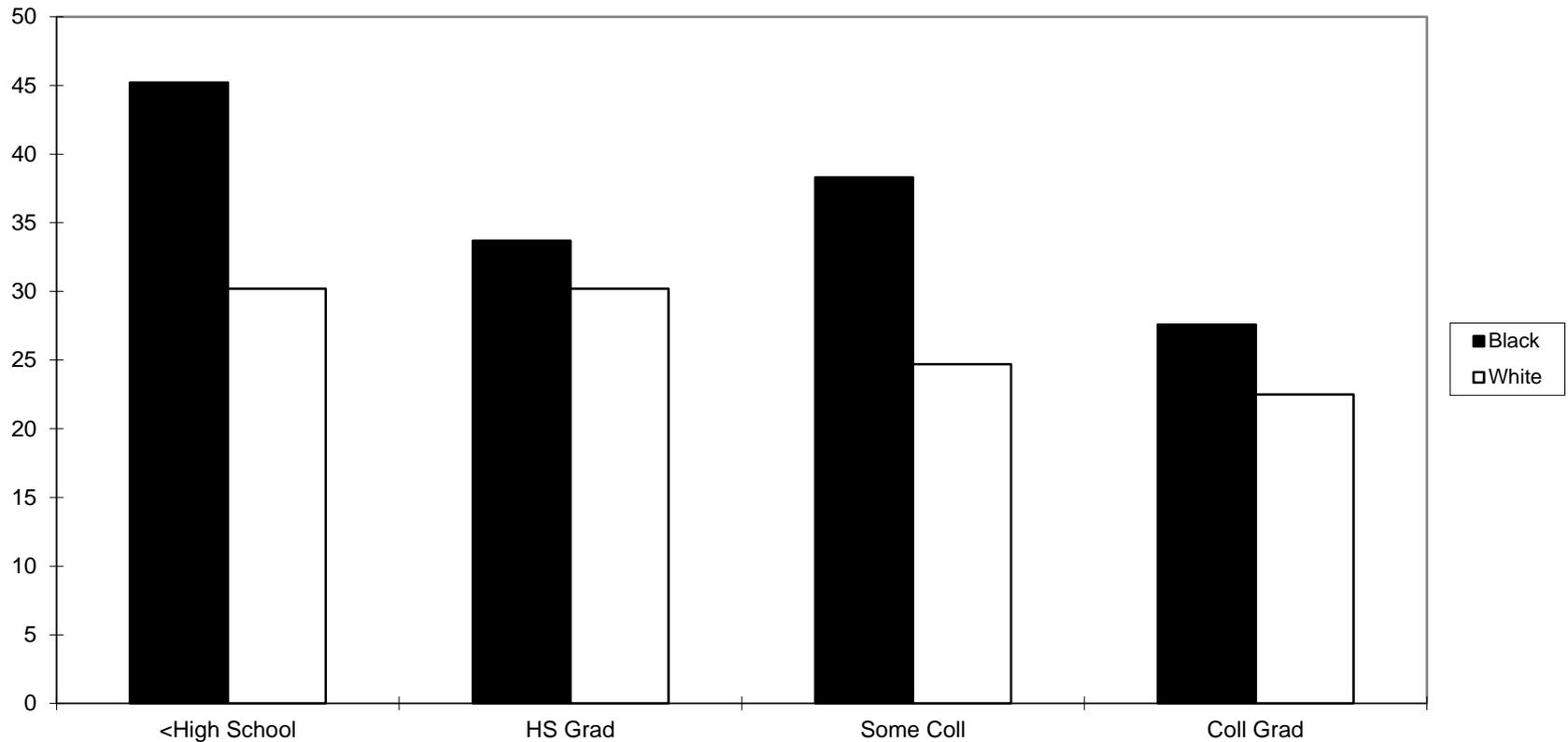
Source: Original analysis of 2013 National Health Interview Survey

Education and Disparities in Obesity, Age-Adjusted



Source: Original analysis of 2013 National Health Interview Survey

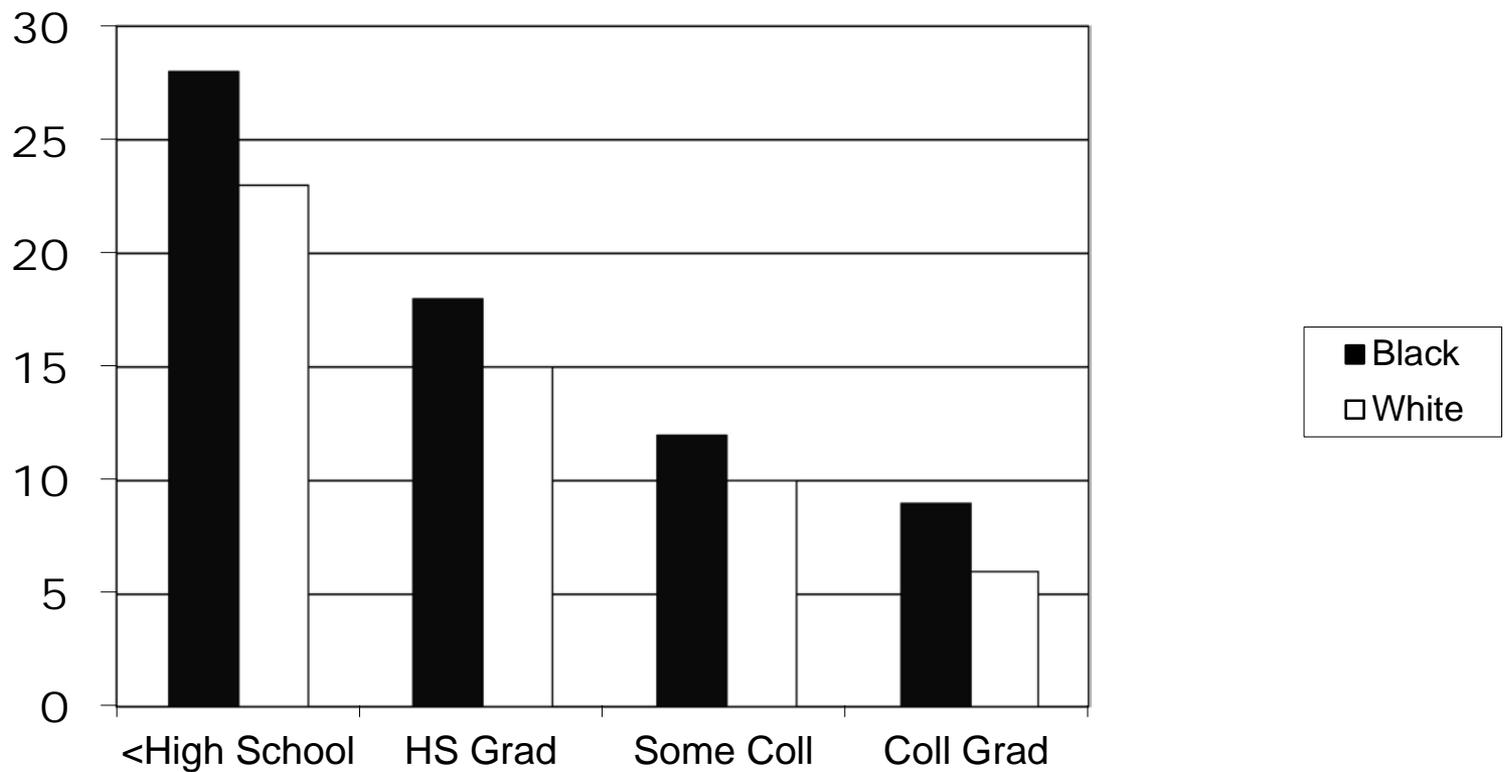
Education and Disparities in Hypertension, Age-Adjusted



Source: Original analysis of 2013 National Health Interview Survey

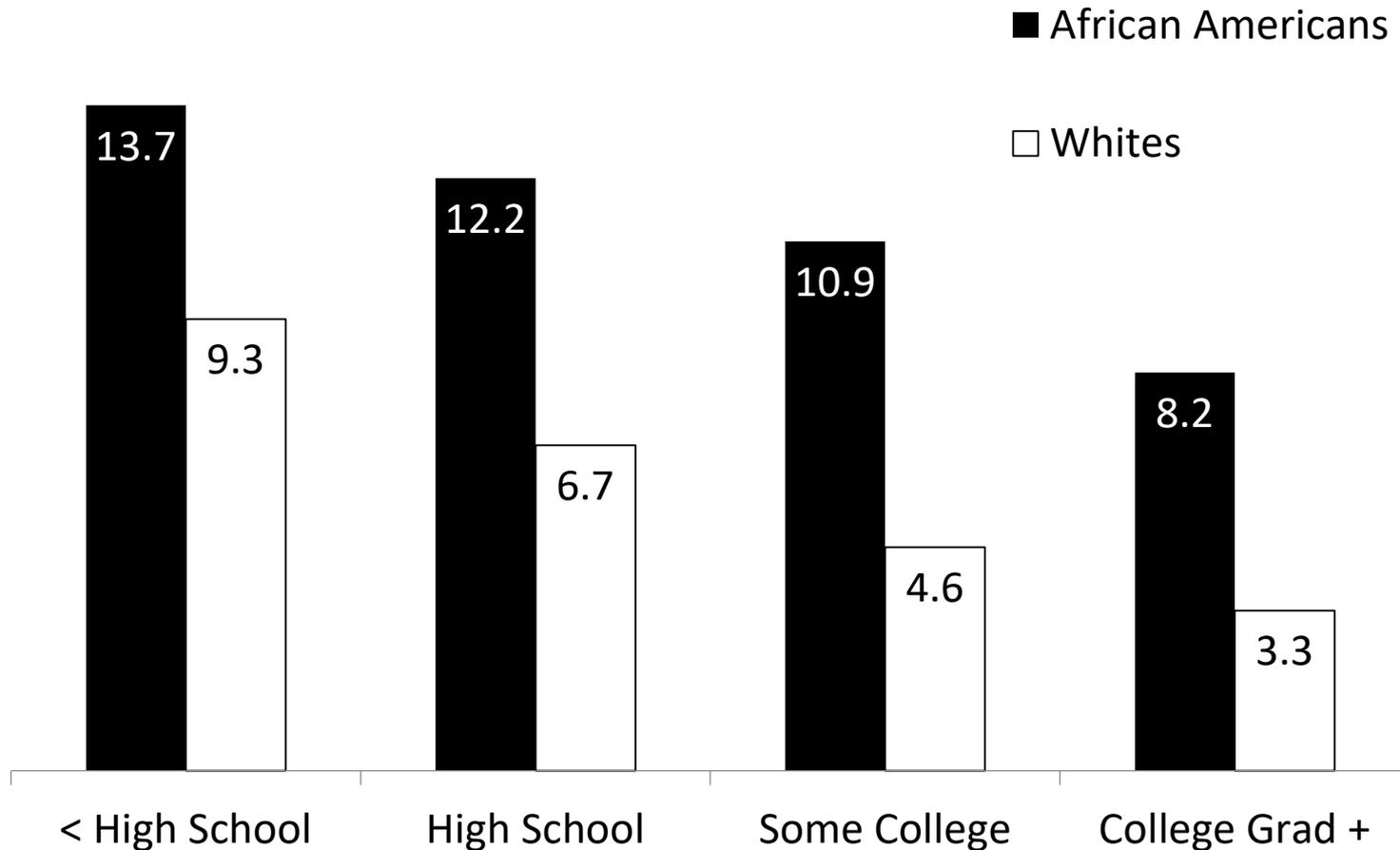


Education and Disparities in Self Reported “Fair” or “Poor” Health, Age-Adjusted

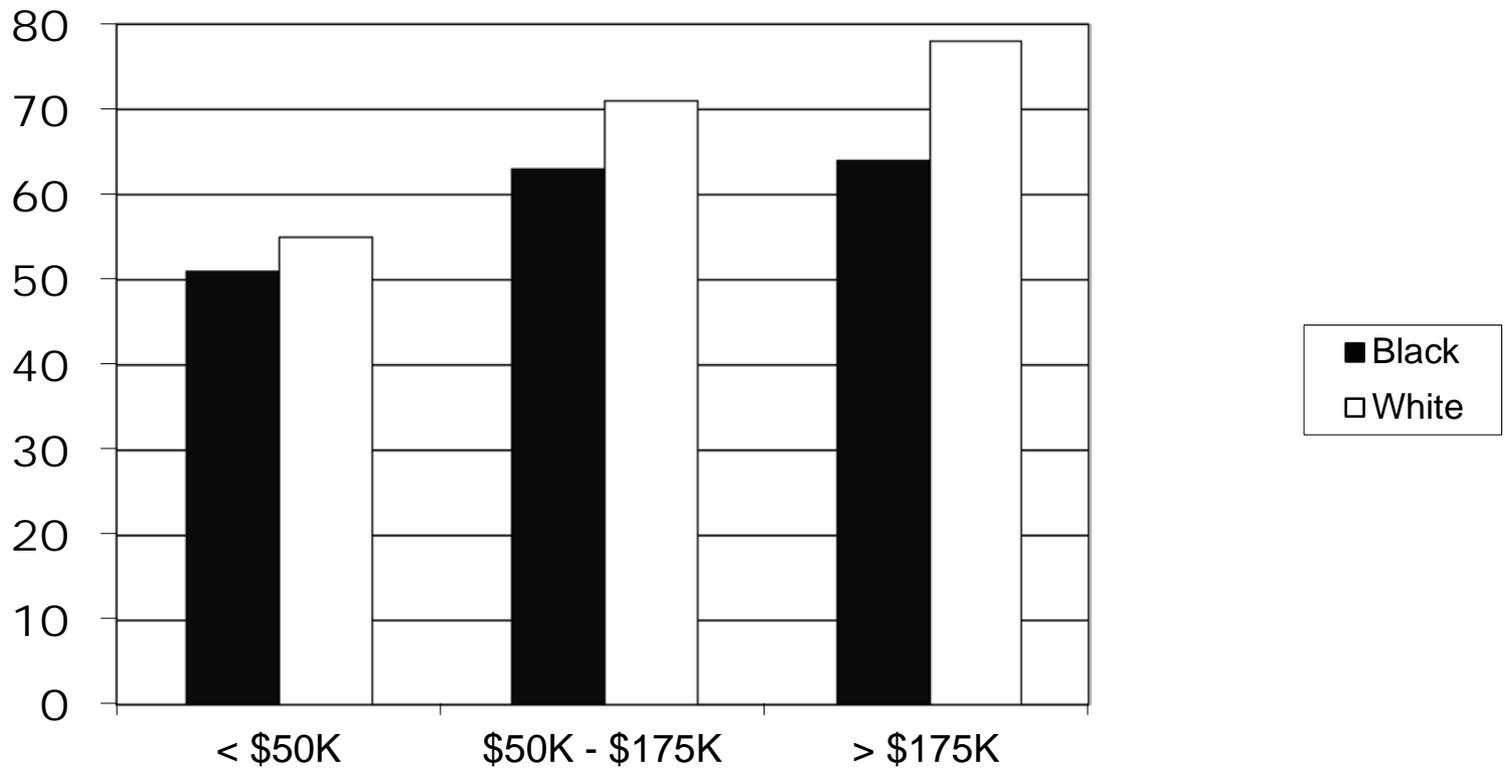


Source: Original analysis of 2013 National Health Interview Survey

Infant mortality rates by Mother's education, 2015

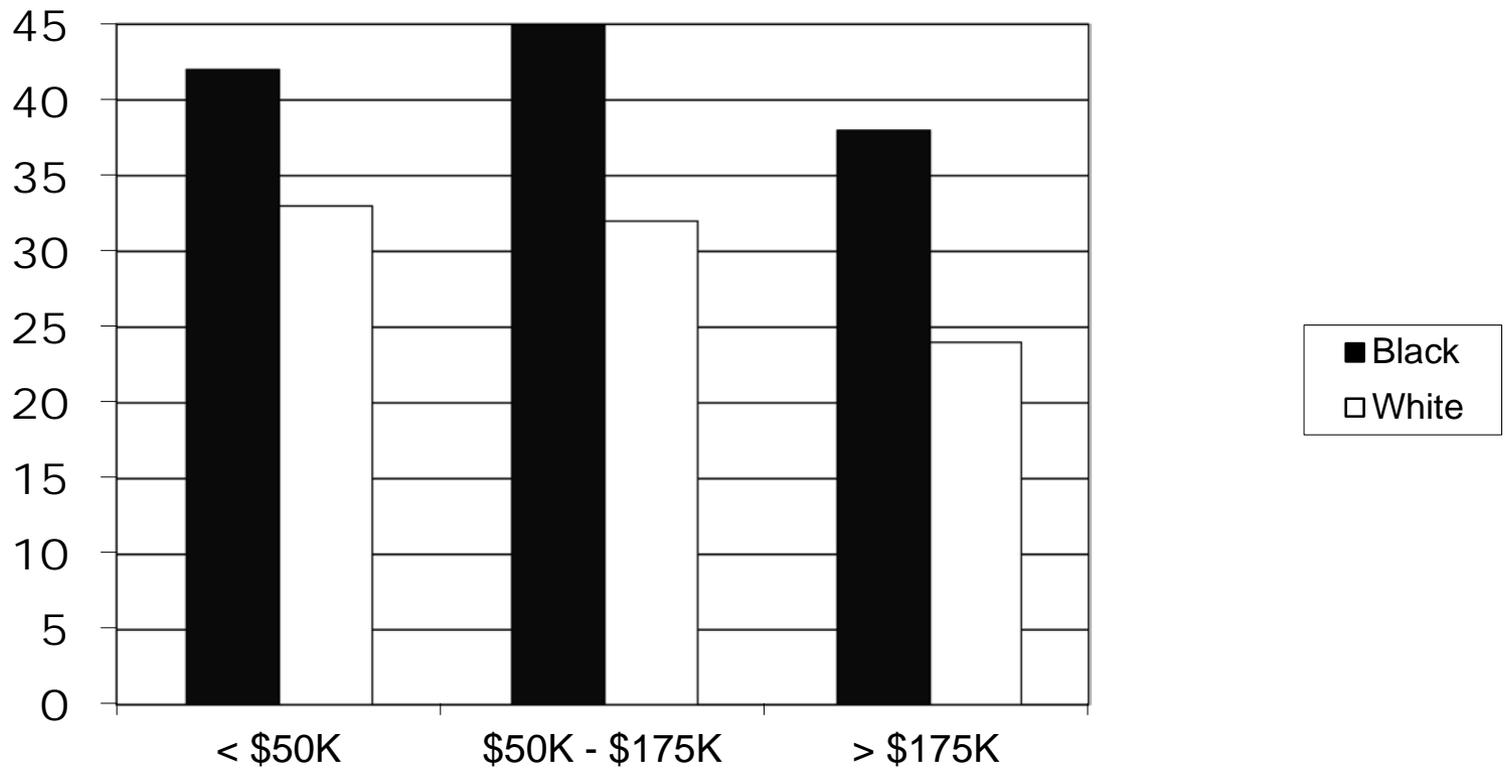


Income and Self-rating of health: “Very Good” or “Excellent” Health



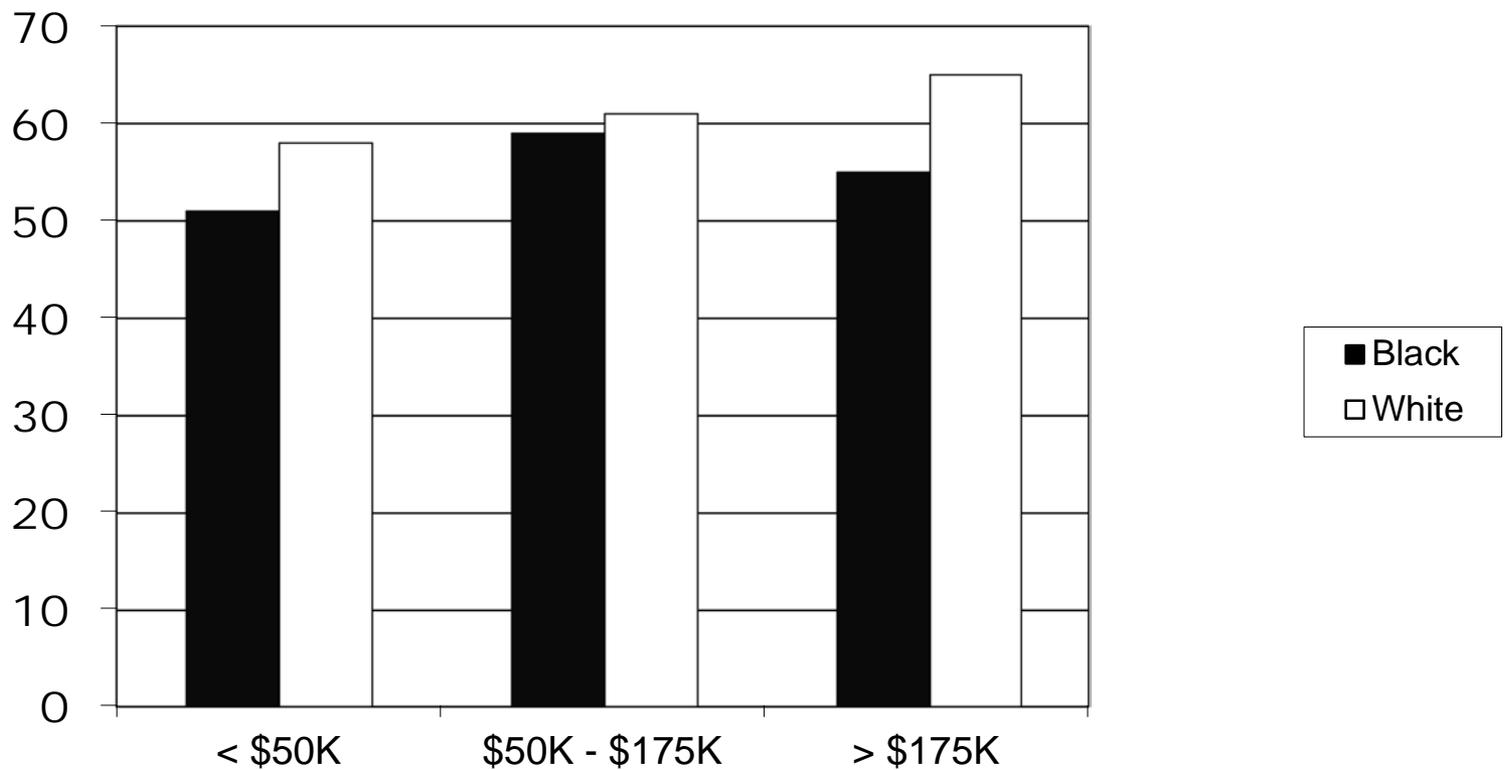
Source: Original analysis of Medical Expenditure Panel Survey

Income and Obesity



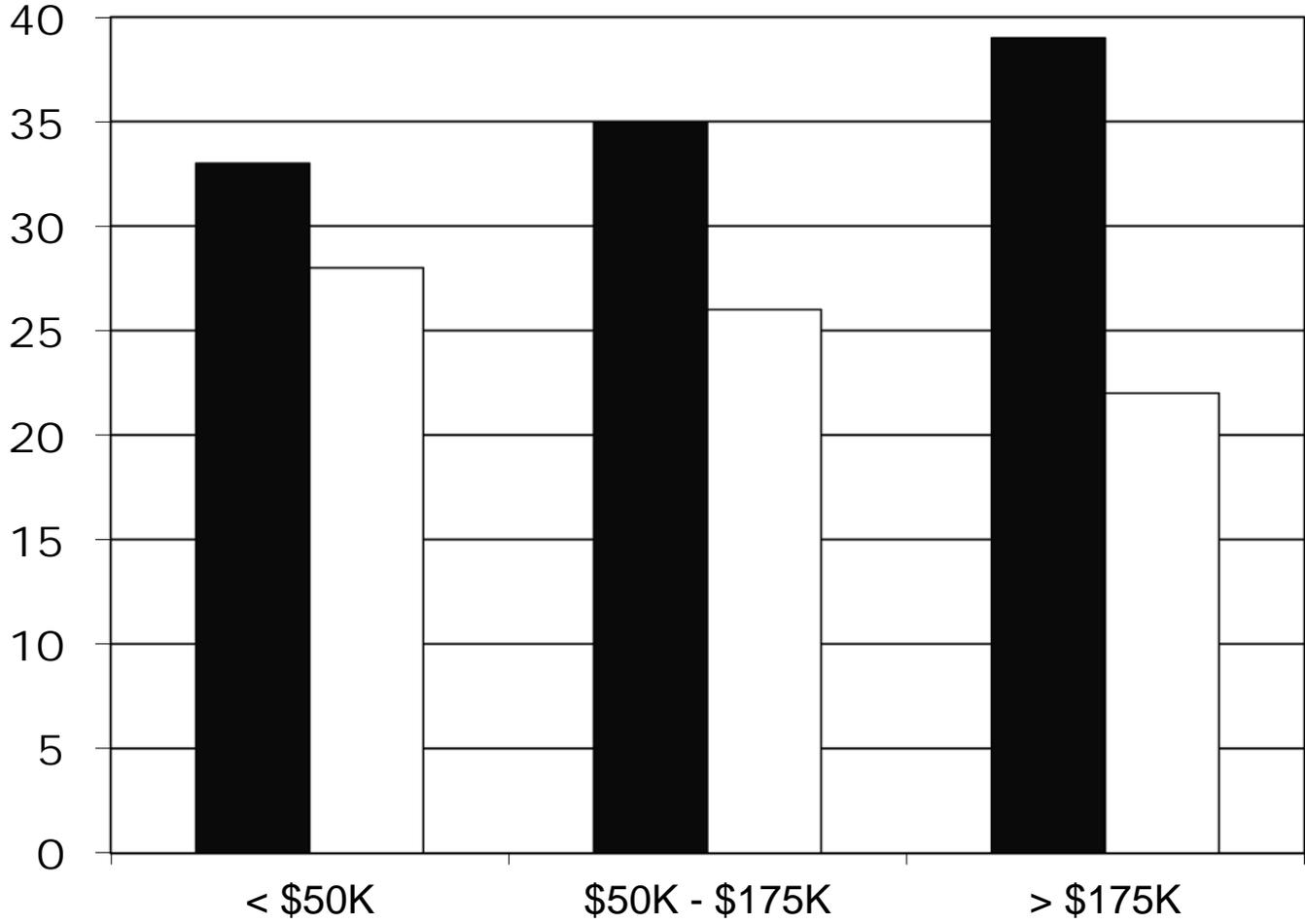
Source: Original analysis of Medical Expenditure Panel Survey

Income and Exercise: 30 minutes three times per week



Source: Original analysis of Medical Expenditure Panel Survey

Income and Hypertension Diagnosis



Source: Original analysis of Medical Expenditure Panel Survey



A brief Message to Researchers

Example

- National Health Interview Survey (NHIS),
n=93,386
- N=33,148 adults age 40+ with complete
data on income, race and ADL
- African Americans, n=4473 (12%)
- Income, <\$20K=6813; \$20K-\$75K=19,504;
>\$75K=6831
- At least 1 ADL = 1043 (2.8%)

ADL regressed on race

	Odds Ratio	95% Confidence Interval
African American (Binary variable)	1.46	1.23 – 1.72

ADL regressed on Income

	Odds Ratio	95% Confidence Interval
\$20K - \$75K	.35	.31 - .39
>\$75K	.18	.15 - .23

ADL regressed on race

	Odds Ratio	95% Confidence Interval
African American (Binary variable)	1.18	.98 – 1.41
\$20K - \$75K	.32	.28 - .37
>\$75K	.15	.12 - .20

Cross tabulation of race and ADL within income groupings

	White	Black	Total	P-Value
<\$20K	6.1% e=304	7.6% e=97	6.4% e=401	.031
\$20K-\$75K	2.1% e=343	2.1% e=45	2.1% e=388	.50
>\$75	1.0% e=56	1.7% e=8	1.0% e=64	.10

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A Baltimore Area High School



A Baltimore Area High School



A Baltimore Area High School



A Baltimore Area High School



A Baltimore Area High School



A Baltimore Area High School



A Baltimore Area High School



“But I adjusted for SES...”



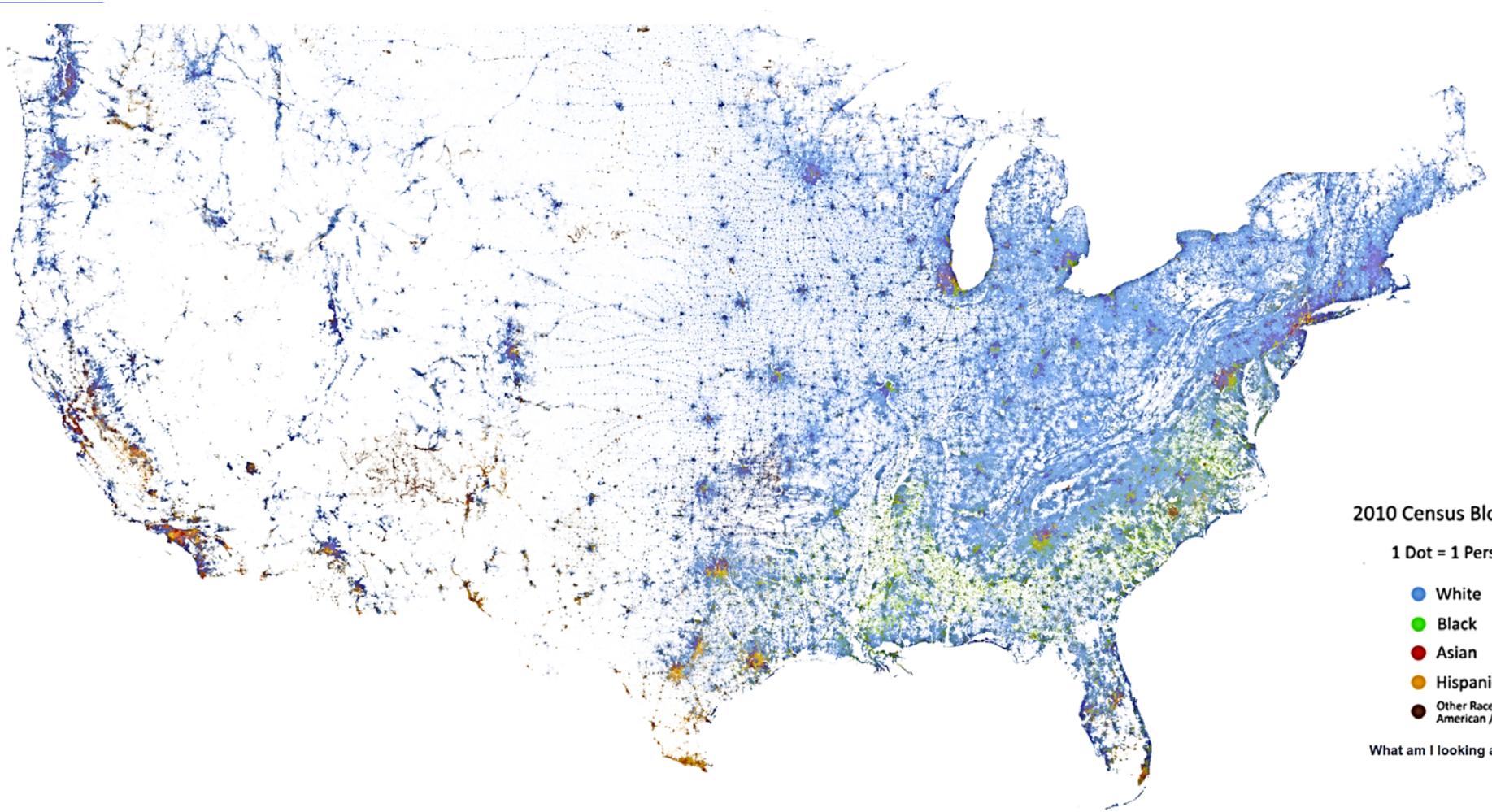
If not genetics, healthcare or SES
then what is it?

WHITE



COLORED



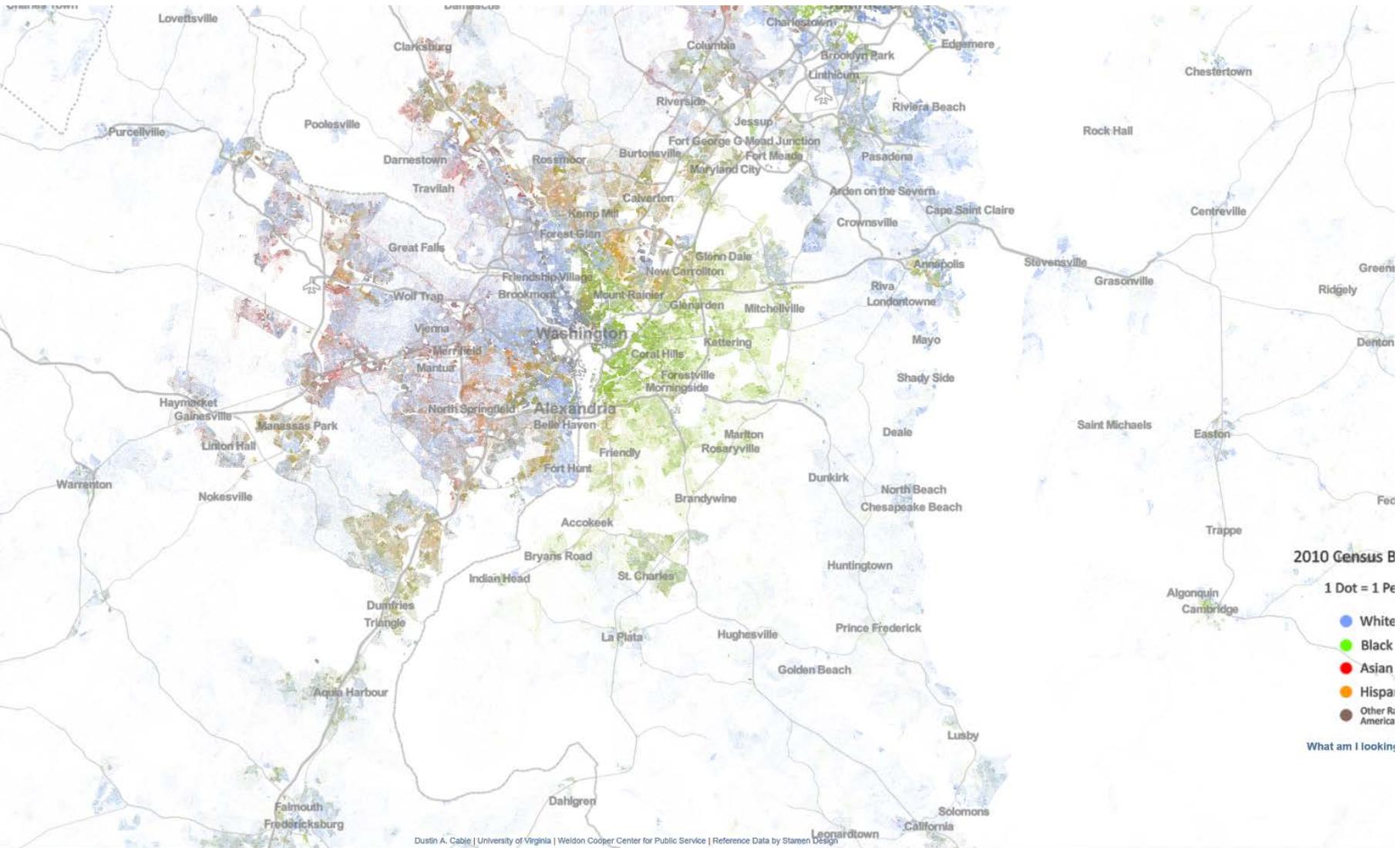


2010 Census Block Data

1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

What am I looking at...?



2010 Census B

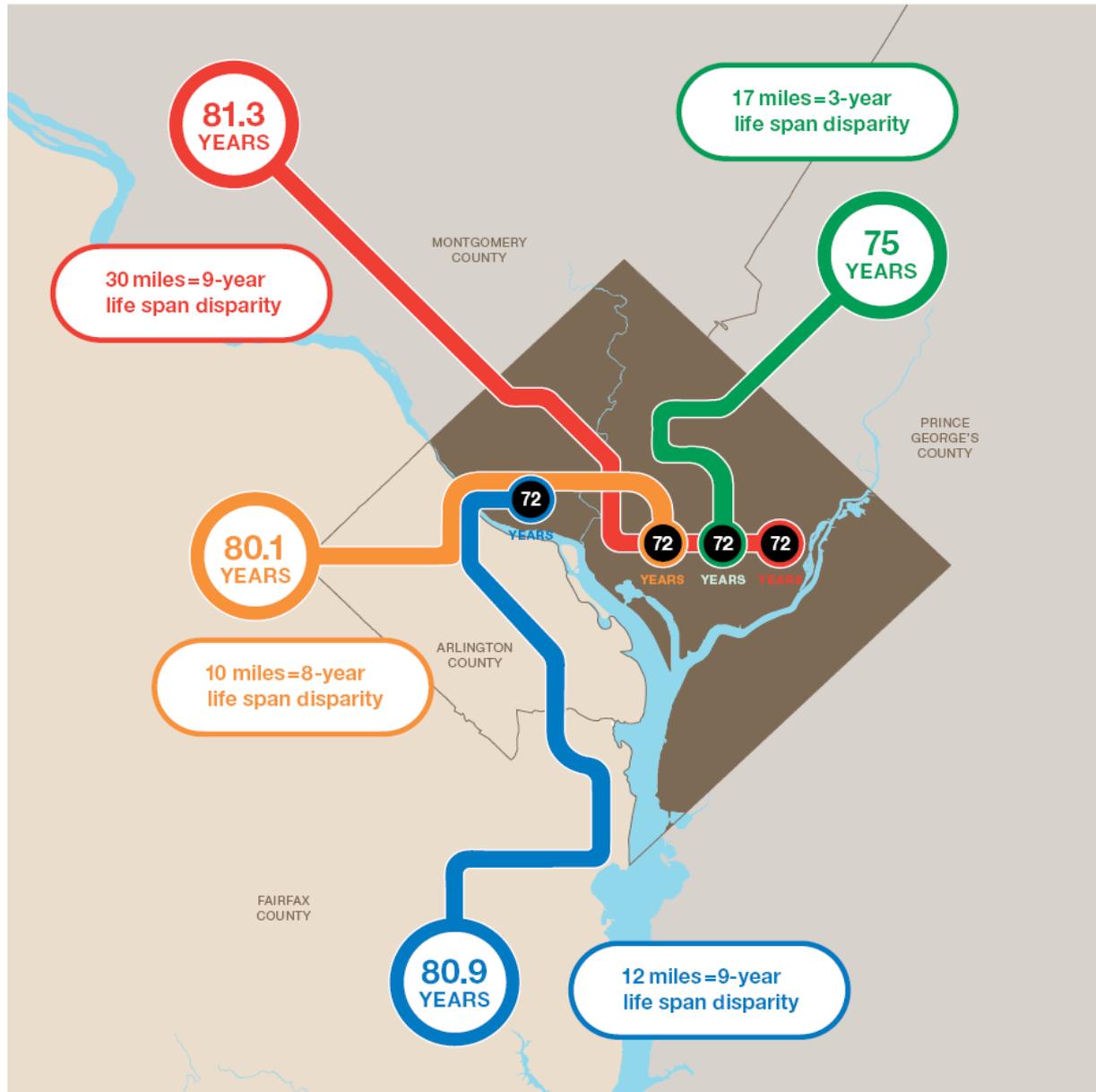
1 Dot = 1 Pe

- White
- Black
- Asian
- Hispani
- Other Ra
America

What am I lookin

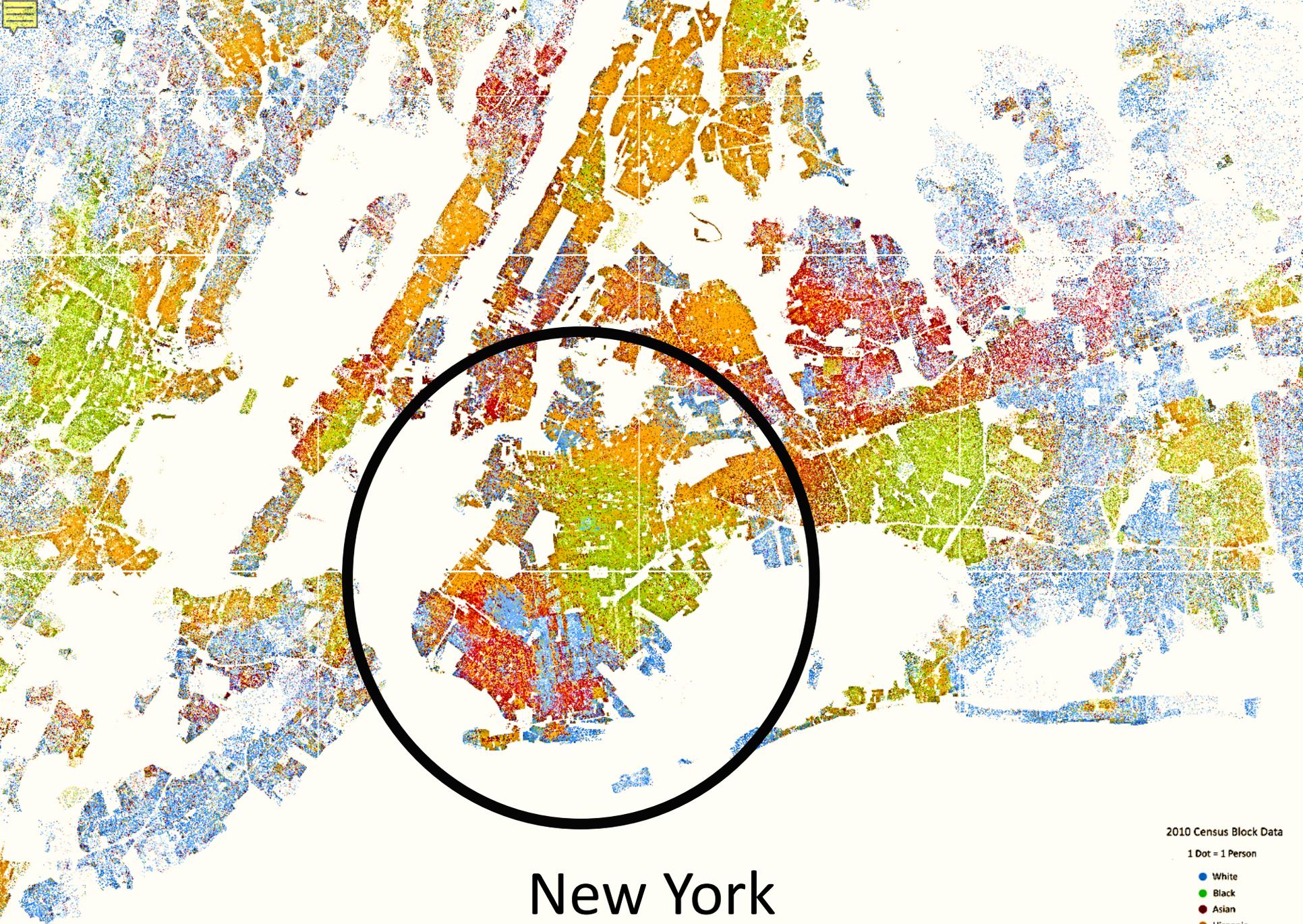
Dustin A. Cable | University of Virginia | Weldon Cooper Center for Public Service | Reference Data by Stamen Design





A Short Distance to Large Disparities in Health





2010 Census Block Data

1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial

New York

86,377 People
1.5 Square Miles

2010 Census Block Data

1 Dot = 1 Person

- White
- Black
- Asian
- Hispanic
- Other Race / Native American / Multi-racial





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MONEY ORDERS
KEYS MADE

BEER
WINE
AND
LIQUOR

FREE
MONEY ORDER
CHECK CASHED

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32 OZ
FINE MALT LIQUOR

NO LOITERING
WITHIN 100' OF
THIS BUILDING
BY ORDER OF
THE BALTO CITY
POLICE DEPT

MILWAUKEES
THE BEST
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CASE
CANS

ABSOLUT
VODKA
18.99
750 ML

SMIRNOFF'S
ICE
TRIPLE BLACK
2.59
24 OZ

Colt
45
11.99
33 OZ

Carlsberg
5.99
15.99
33 OZ

PRIVATE
STOCK
21.99
33 OZ

MGD
4.99 11.99
33 OZ

SNOWBALLS

PEPSI
2 LITER
\$1.19

SALIM
STIR THE SENSES
PASTES
SWEETS

PICK 3
PICK 4
SCRATCH
OFFS

LOTTO

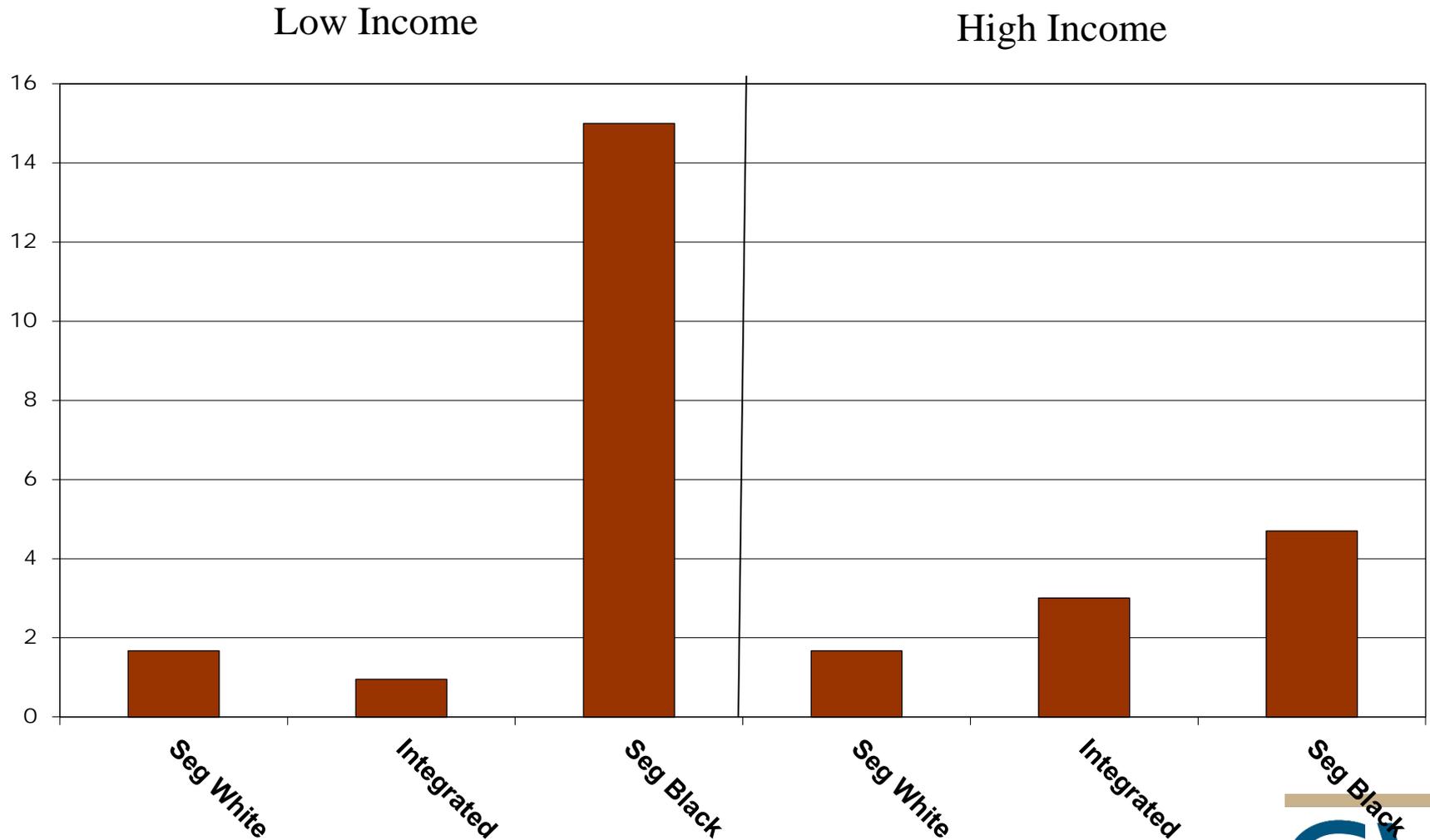




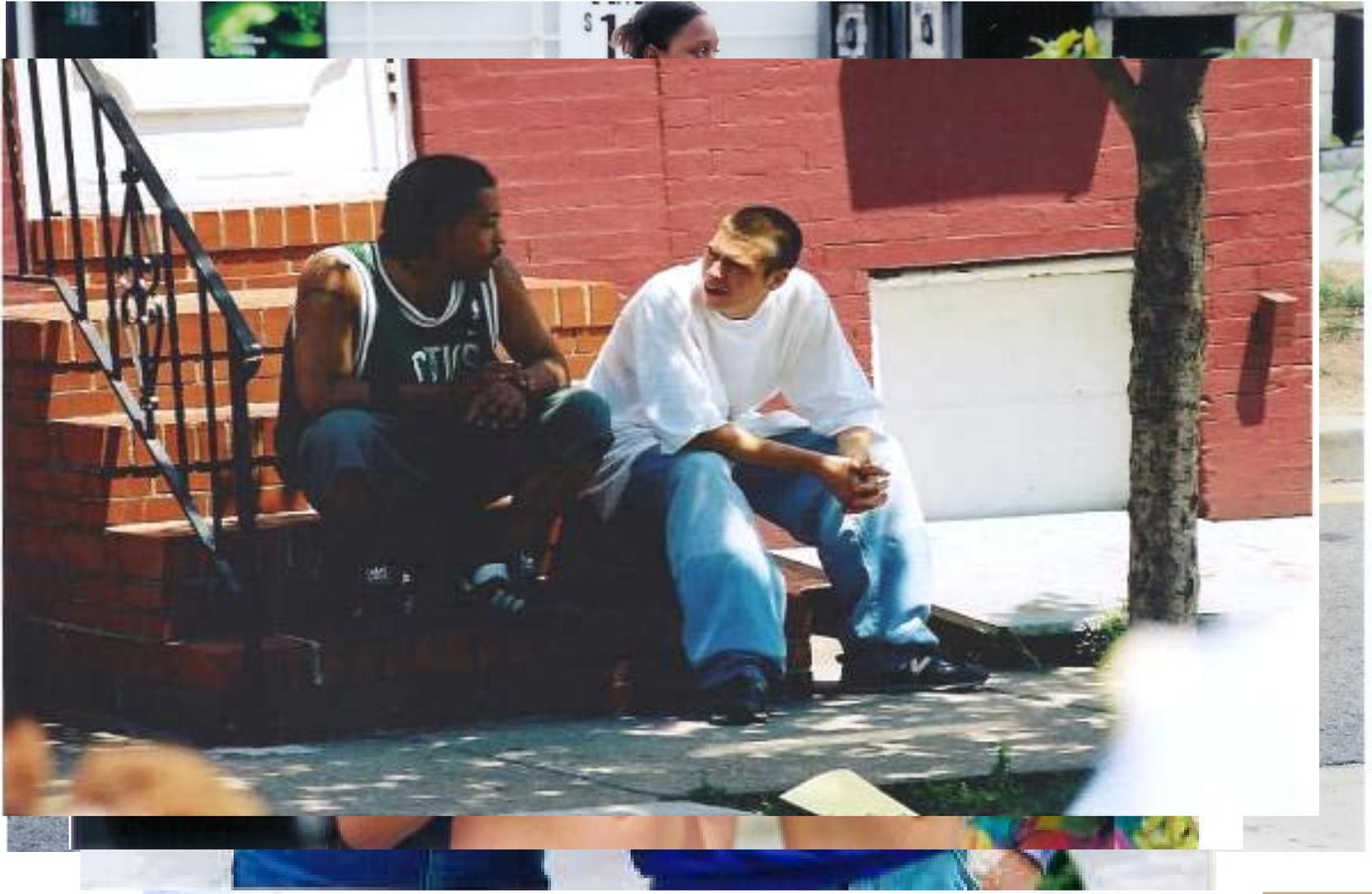




Per Capita Liquor Stores by Race and Income



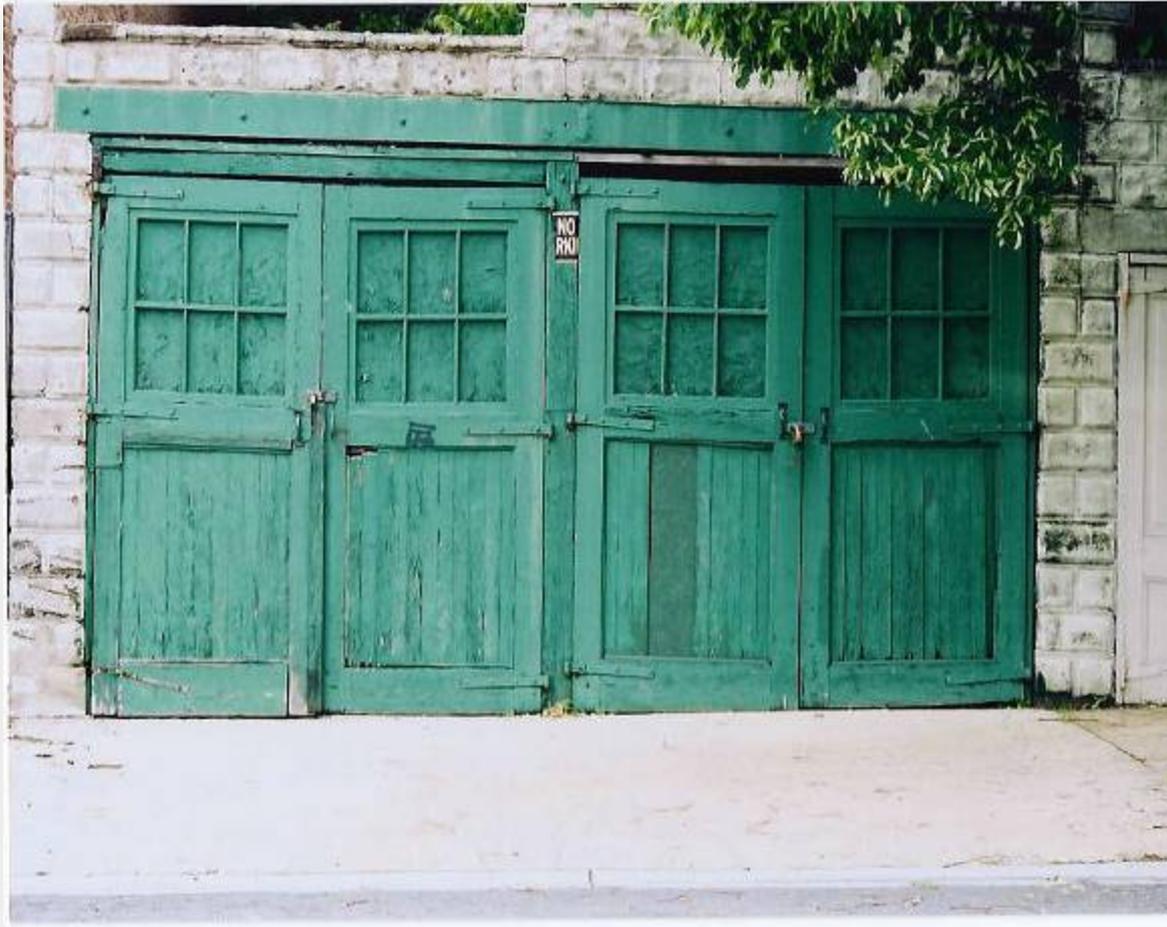




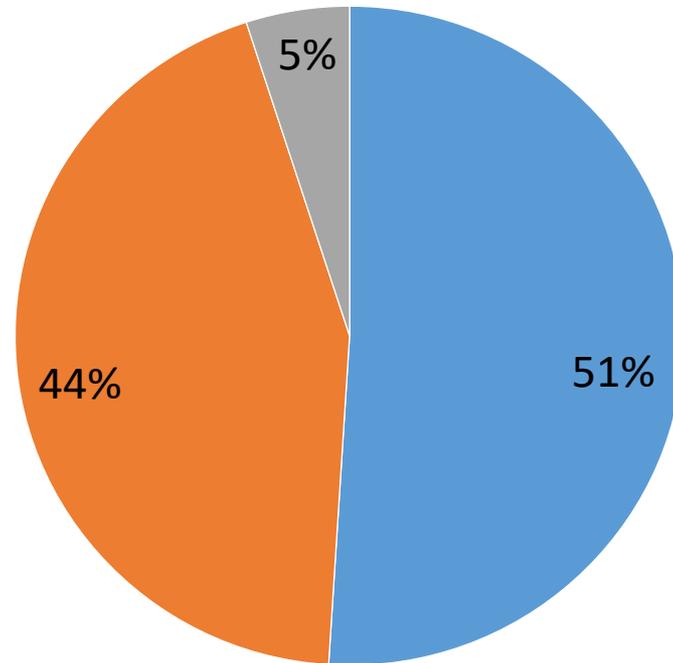
Exploring Health Disparities in Integrated Communities (EHDIC)

- Census tracts
 - 35% African Americans AND 35% white
 - b/w median income ratio 0.85-1.15
 - b/w percent high school grad 0.85-1.15

Profile of the Community

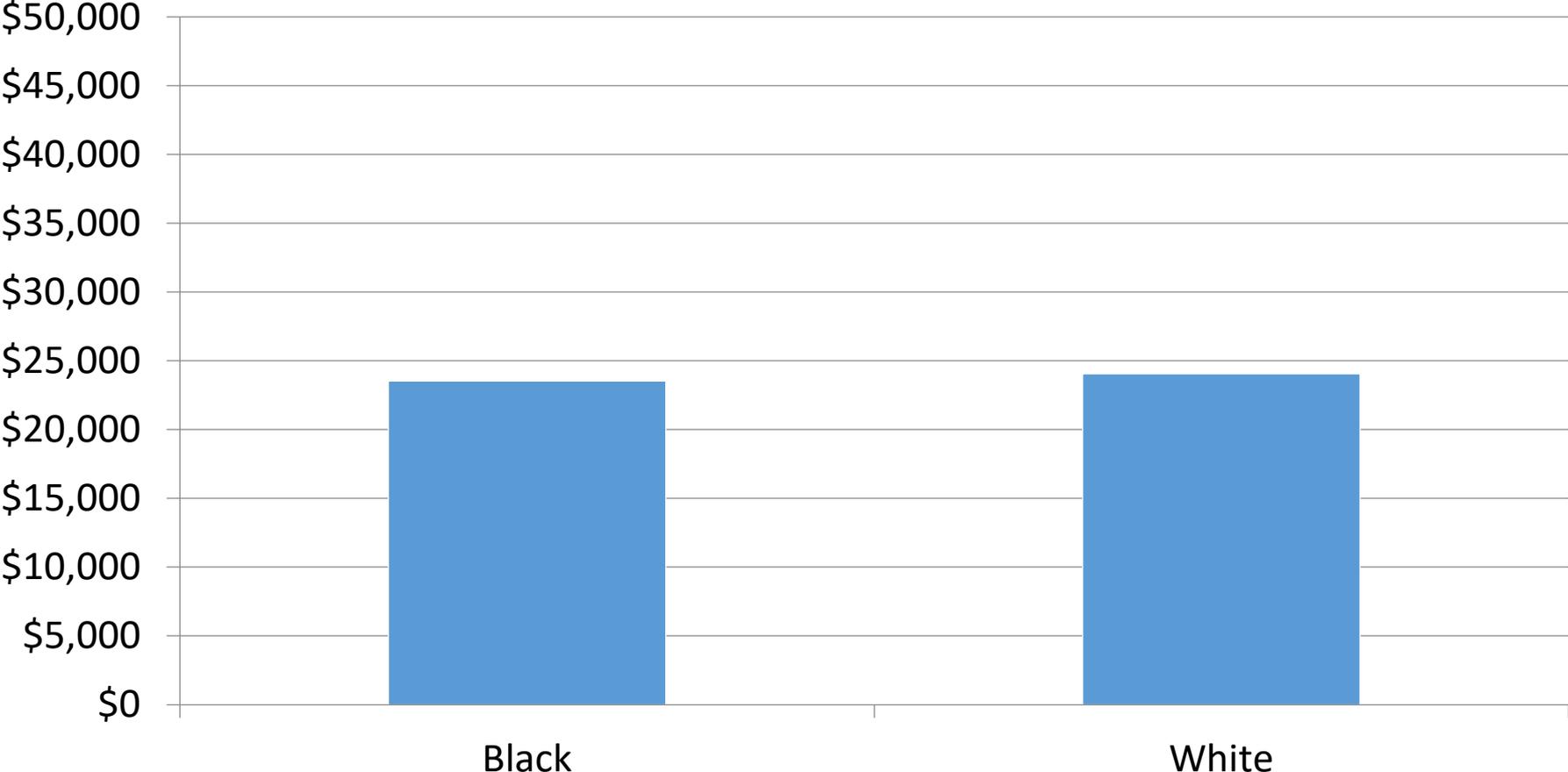


Racial Distribution



■ Black ■ White ■ Other

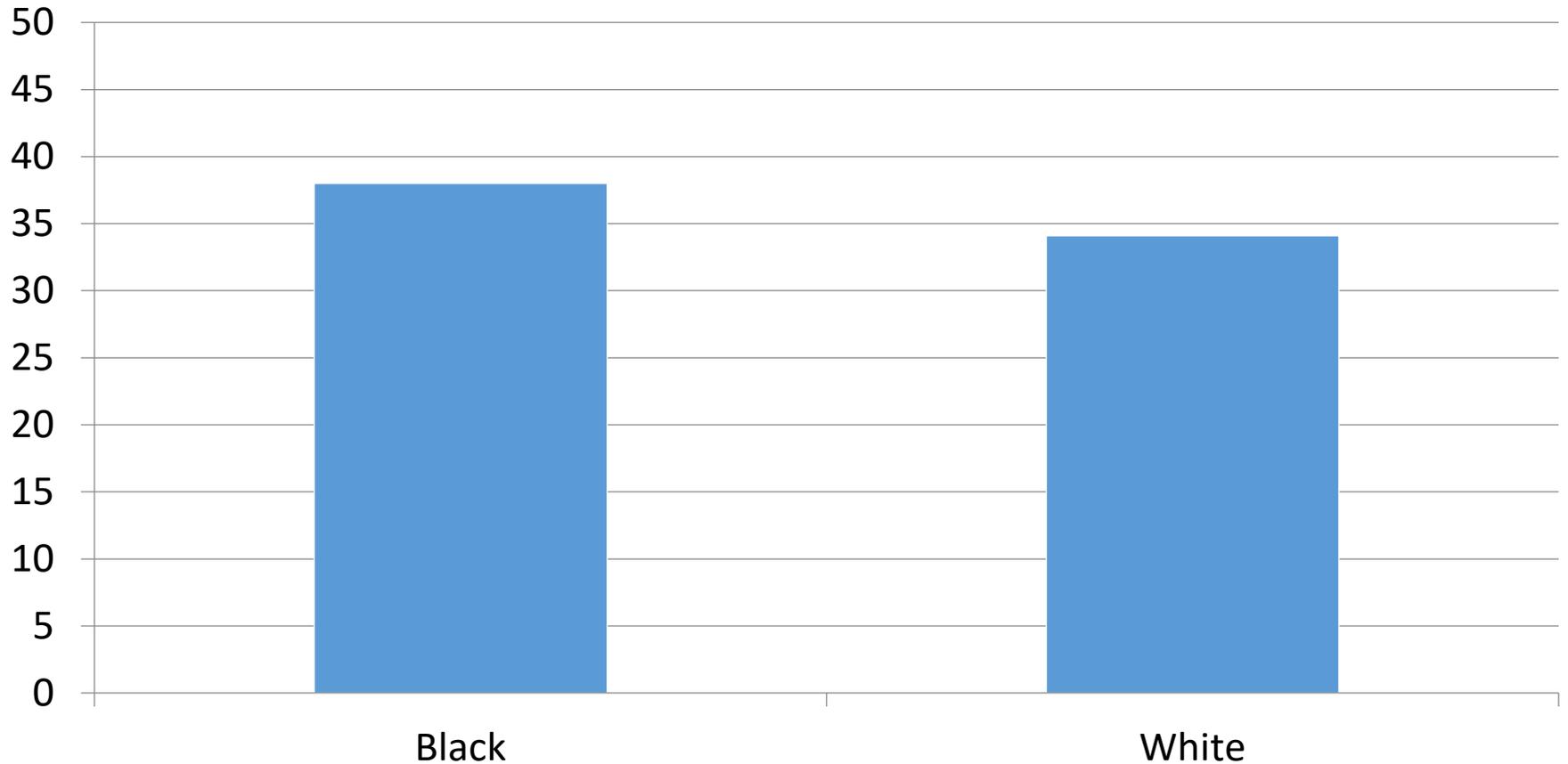
Median Income



Source: US Censuses 2000



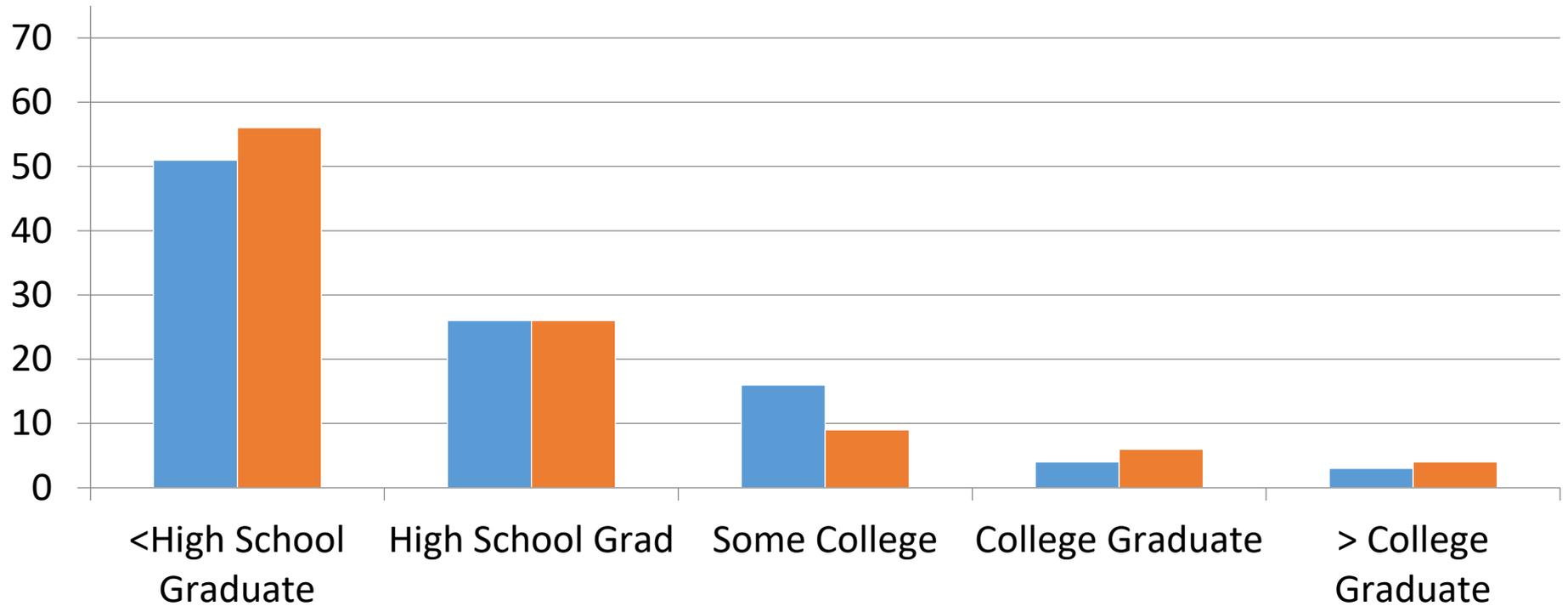
Percent Living Below Official Poverty Level



Source: US Censuses 2000

Educational Status

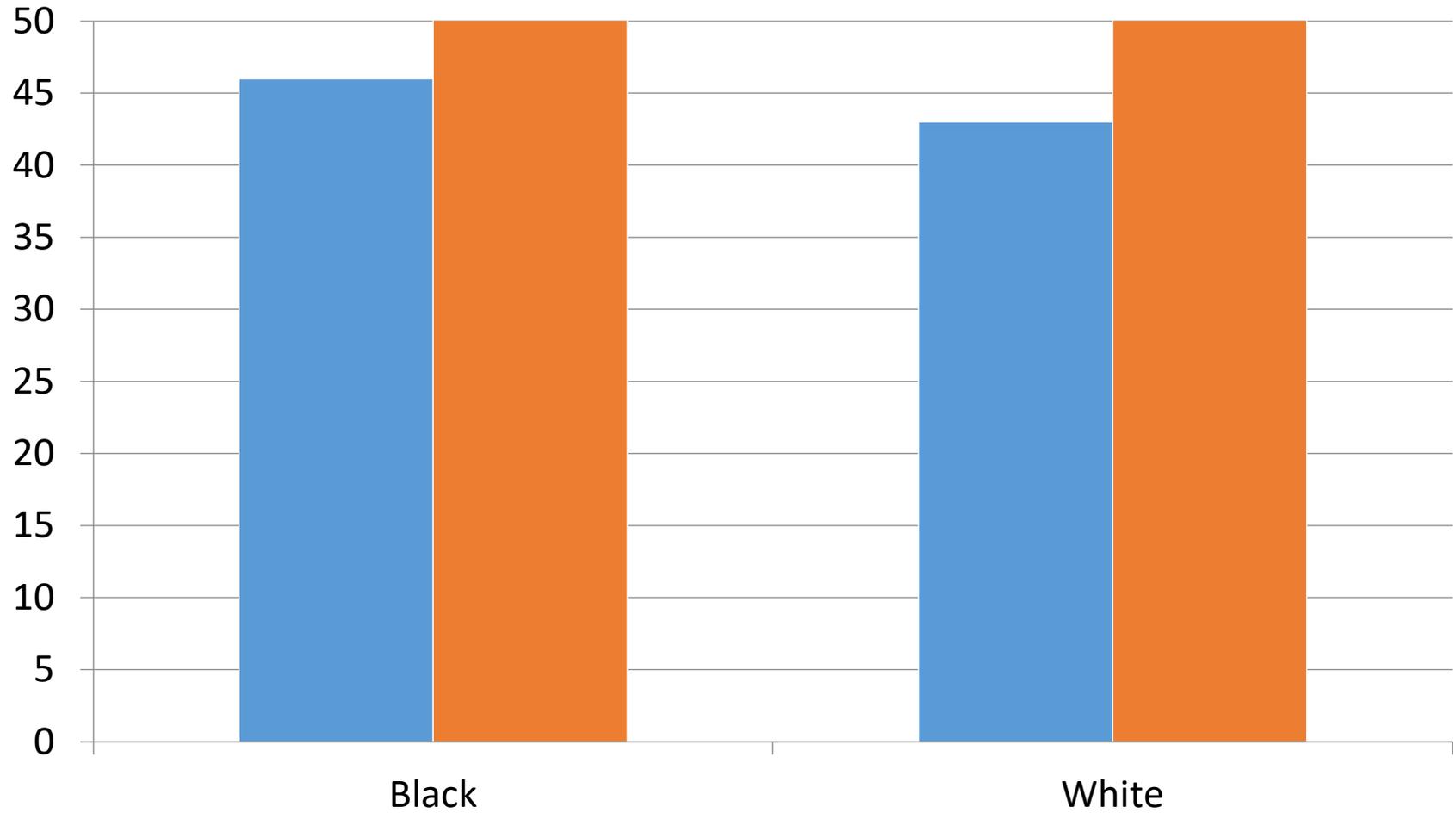
■ Black ■ White



Source: US Censuses 2000



Sex



Source: US Censuses 2000



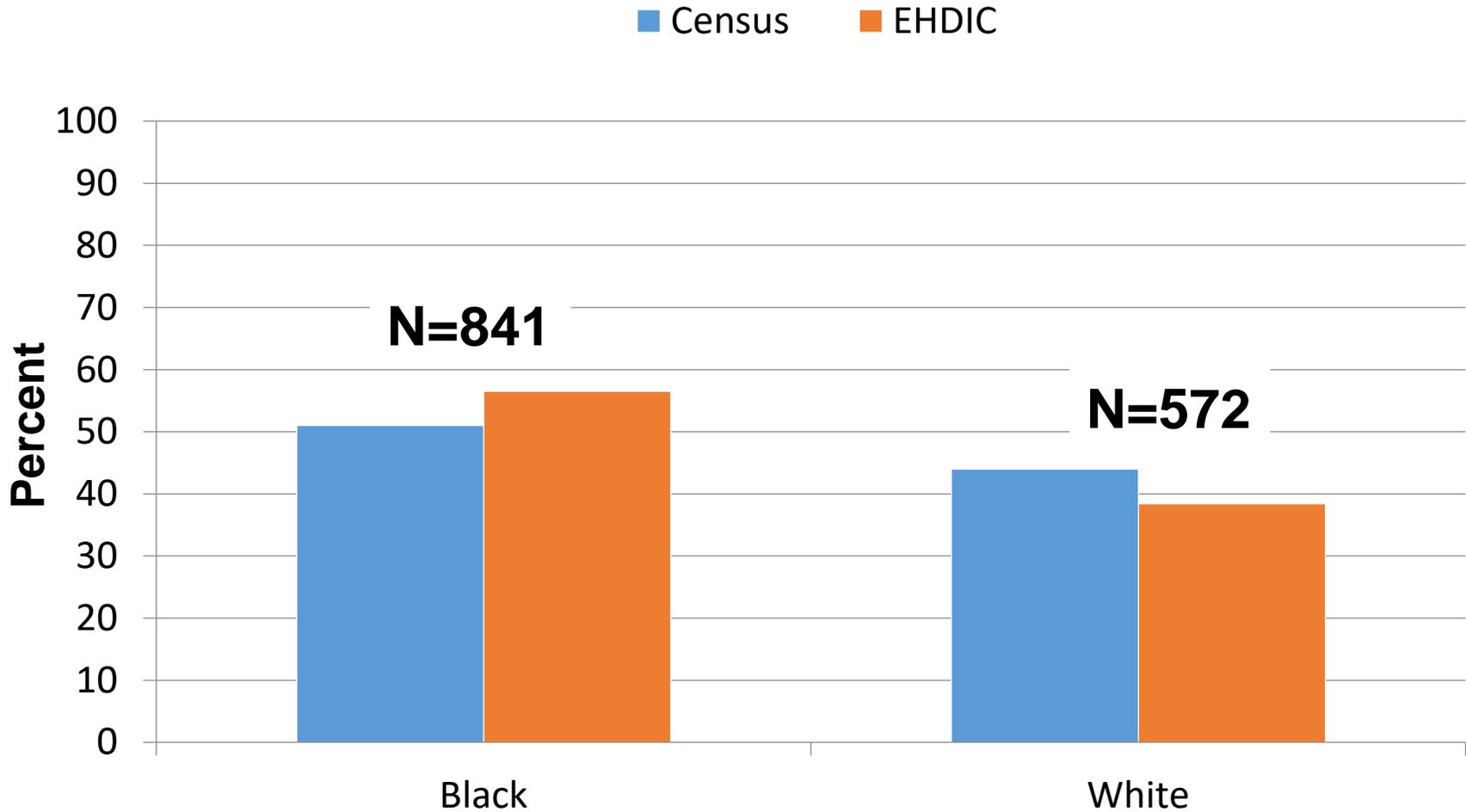
The Study

- Adult Residents of the 2 census tracts
- 40 Minute Interview
- Interviews In-person at home or at health fair
- 3 Blood pressure measurements
- Cuffs calibrated at Johns Hopkins Hospital
- 35 Interviewers
- Interviewer Incentives
- Respondent Incentives
- Interviewed N=1498 (42.14%)

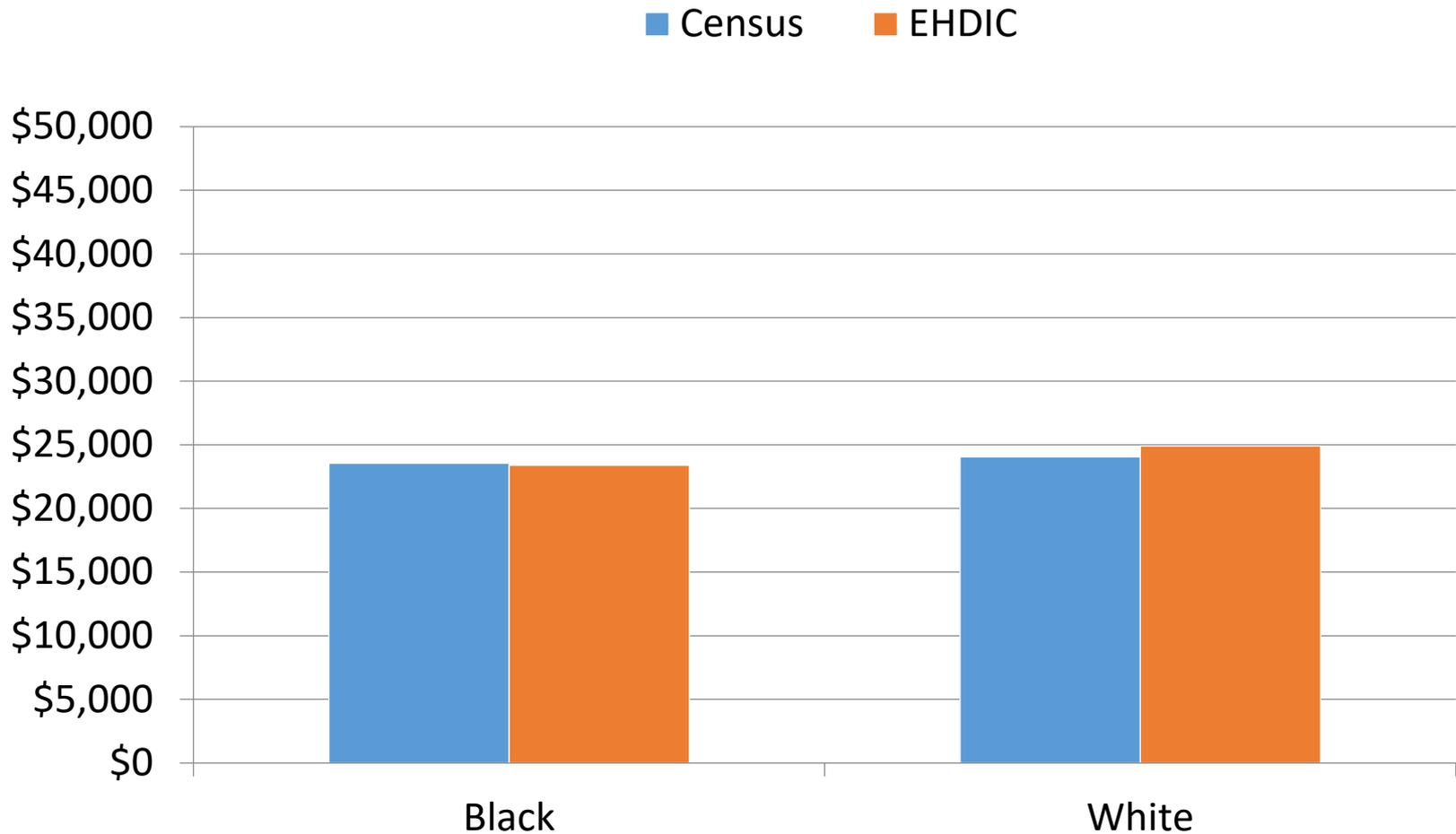
Representativeness of the Sample and Race Differences in the Sample



Racial Distribution of EHDIC Sample

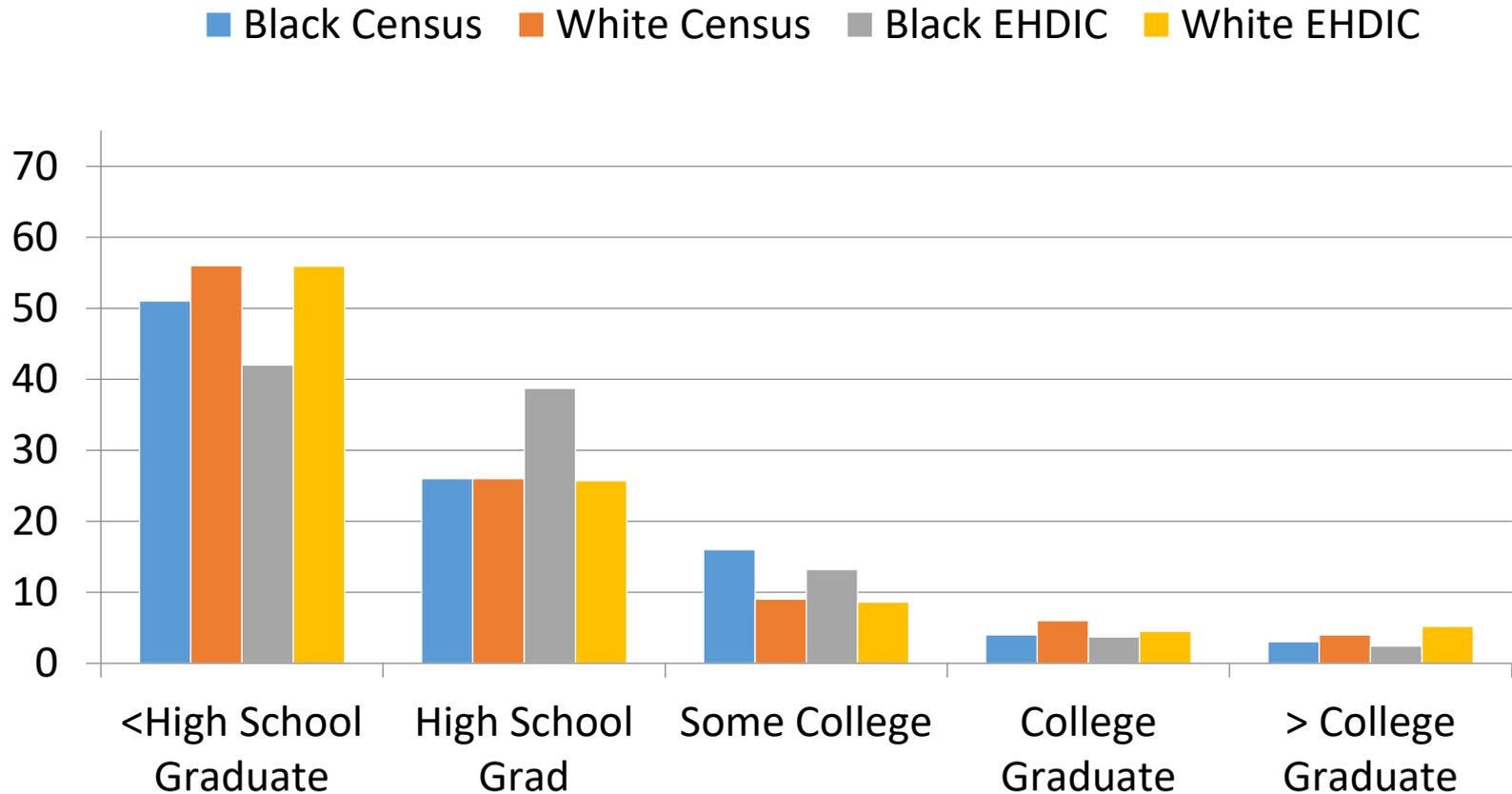


Median Income By Race



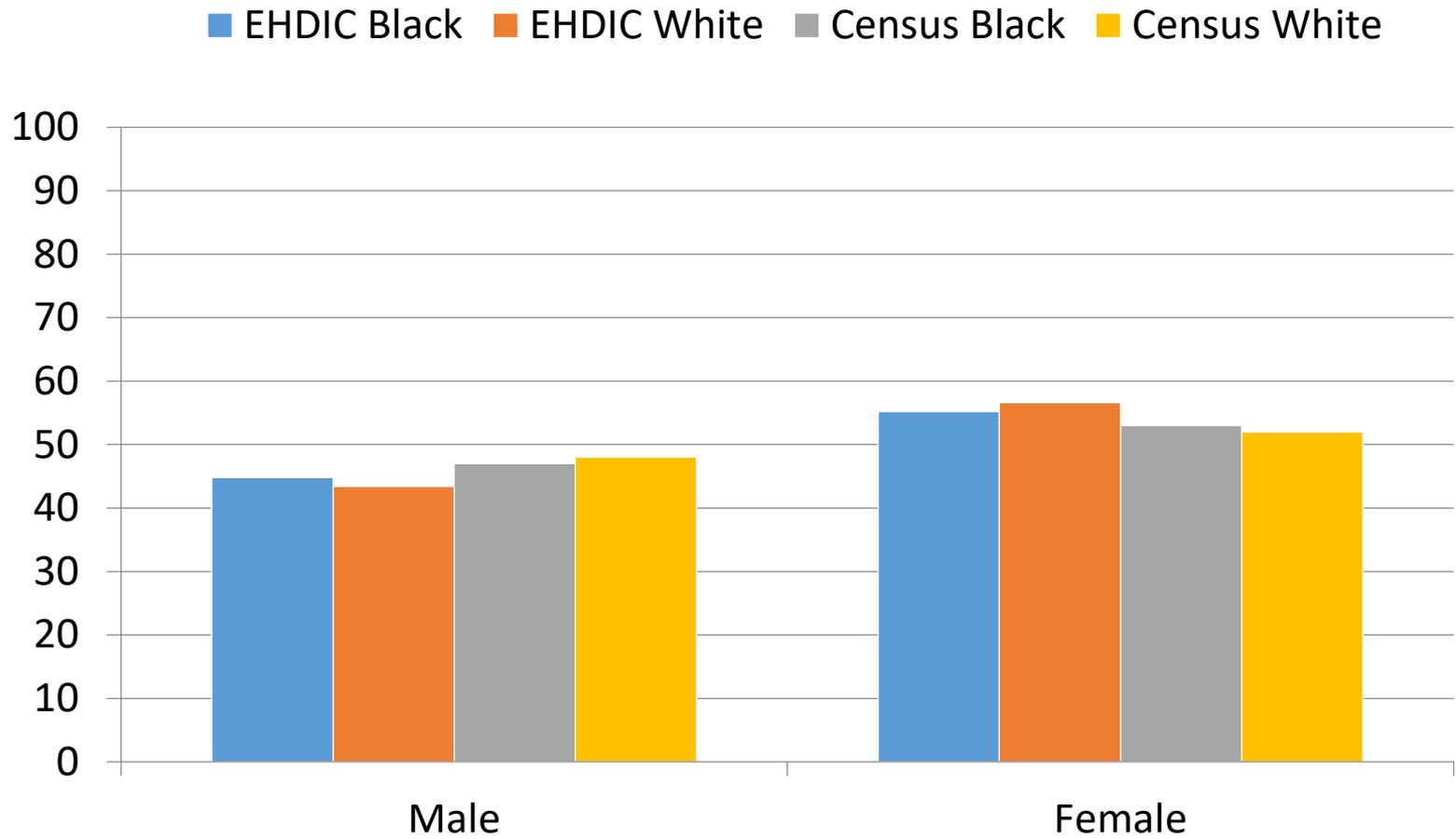
T = -1.942 df=1284 95%CI(-.464,.002)

Educational Status by Race



$X^2 = 45.96$ $df=4$ $p<.0001$

Sex



$X^2 = .22$ df 1 p=.312

Odds Ratios and 95% Confidence Intervals for the Association between Race and Blood Pressure Status in the EDHIC Study

	NHANES 99-04	EHDIC	Percent difference
	O.R. (95% CI)	O.R. (95% CI)	
Model 1	2.25(1.95-2.59)	1.48 (1.16-1.89)	34
Model 2	2.07(1.79-2.40)	1.45 (1.12-1.88)	29
Model 3	2.08(1.80-2.42)	1.43 (1.11-1.85)	31
Model 4	2.01(1.63-2.48)	1.42 (1.09-1.86)	29

Odds Ratios and 95% Confidence Intervals for National Data vs. EHDIC

Condition	National Data (Segregated)	EHDIC (Integrated)
Diabetes ¹	1.61 (1.26-2.04)	1.07 (0.71-1.58)
Obesity ²	1.87 (1.48-2.36)	1.25 (0.90-1.75)
Hypertension ³	2.01 (1.63-2.48)	1.42 (1.09-1.86)
Use of Health Services ⁴	0.74 (0.51-1.07)	1.44 (1.00-1.87)

1 LaVeist, et al. (2009) Journal of General Internal Medicine

2 Bleich, et al. (2010) Journal of Epidemiology and Community Health

3 Thorpe, et al. (2008) Social Science and Medicine

4 Gaskin, et al. (2009) Medical Care Research and Review

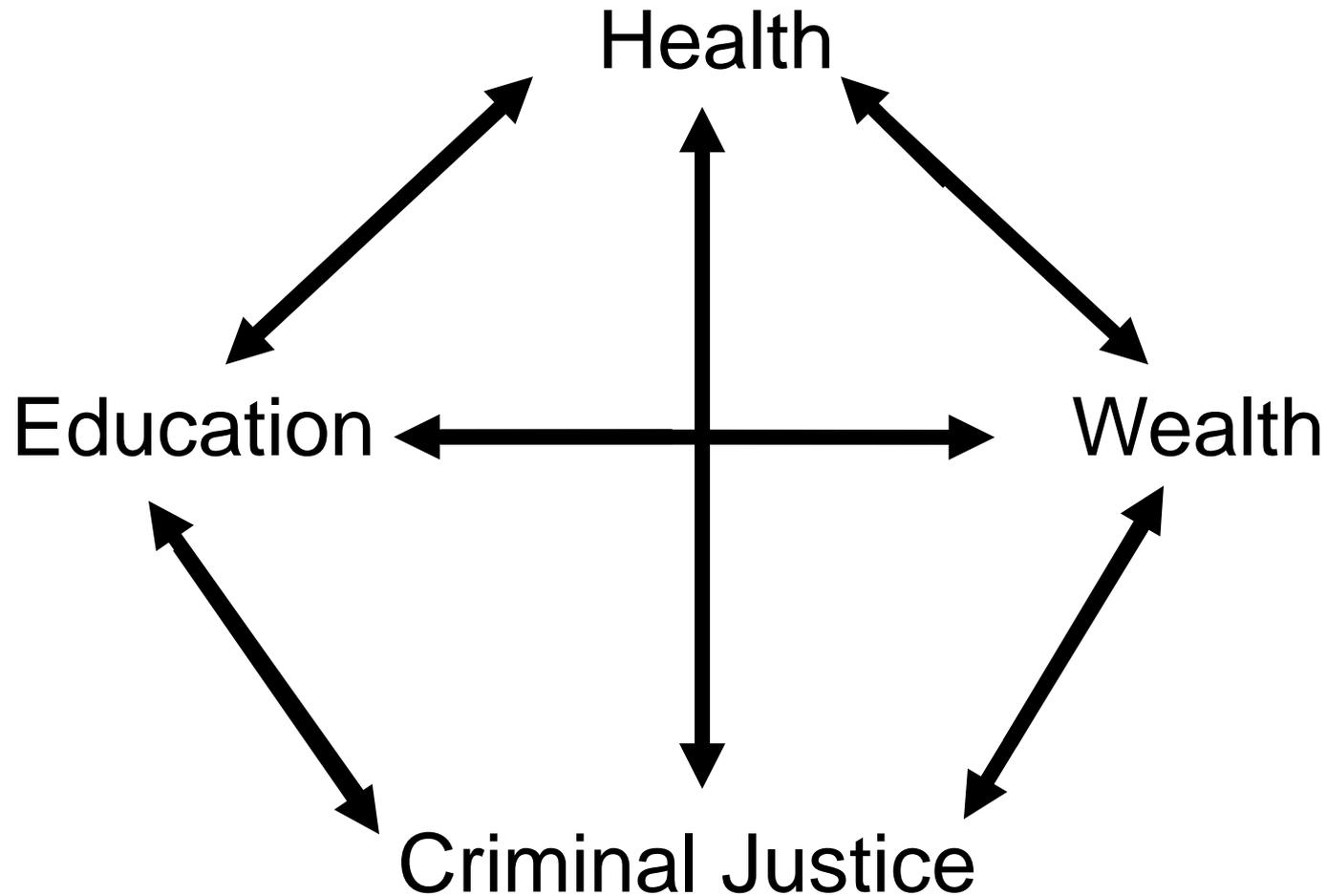




Health Disparities: National Studies vs. EHDIC

Condition	National Data (Segregated)	EHDIC (Integrated)
Diabetes	AA 61% greater	No race difference
Obesity	AA 87% greater	No race difference
Hypertension	AA 101% greater	AA 42% greater
Use of Health Services	No race difference	No race difference

The 4 Great Race Disparities



Imagine

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