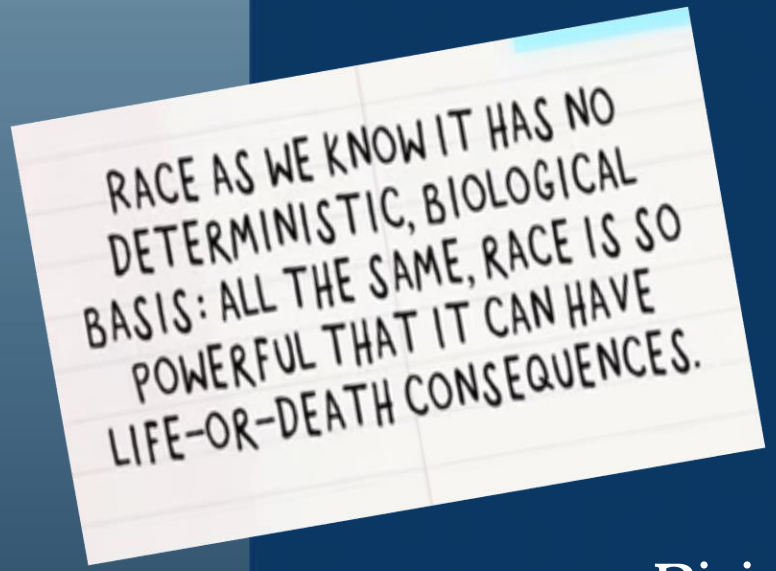
Race, Racism and Biological Embedding:

A 'critical' approach to population health and health inequities



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Center for Health Equity Seminar Series
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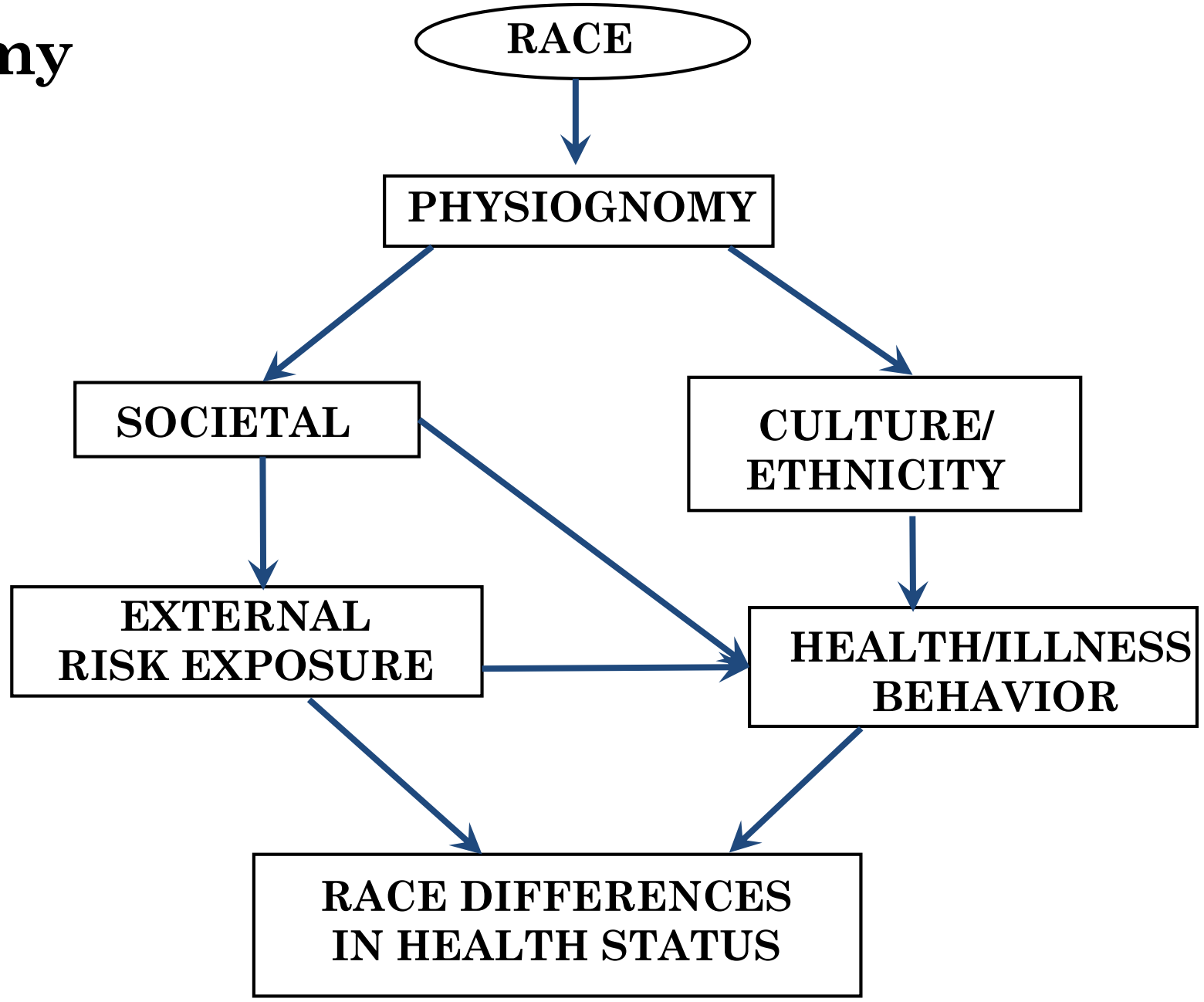
What is this thing called race?

RACE

the power of an illusion

Physiognomy

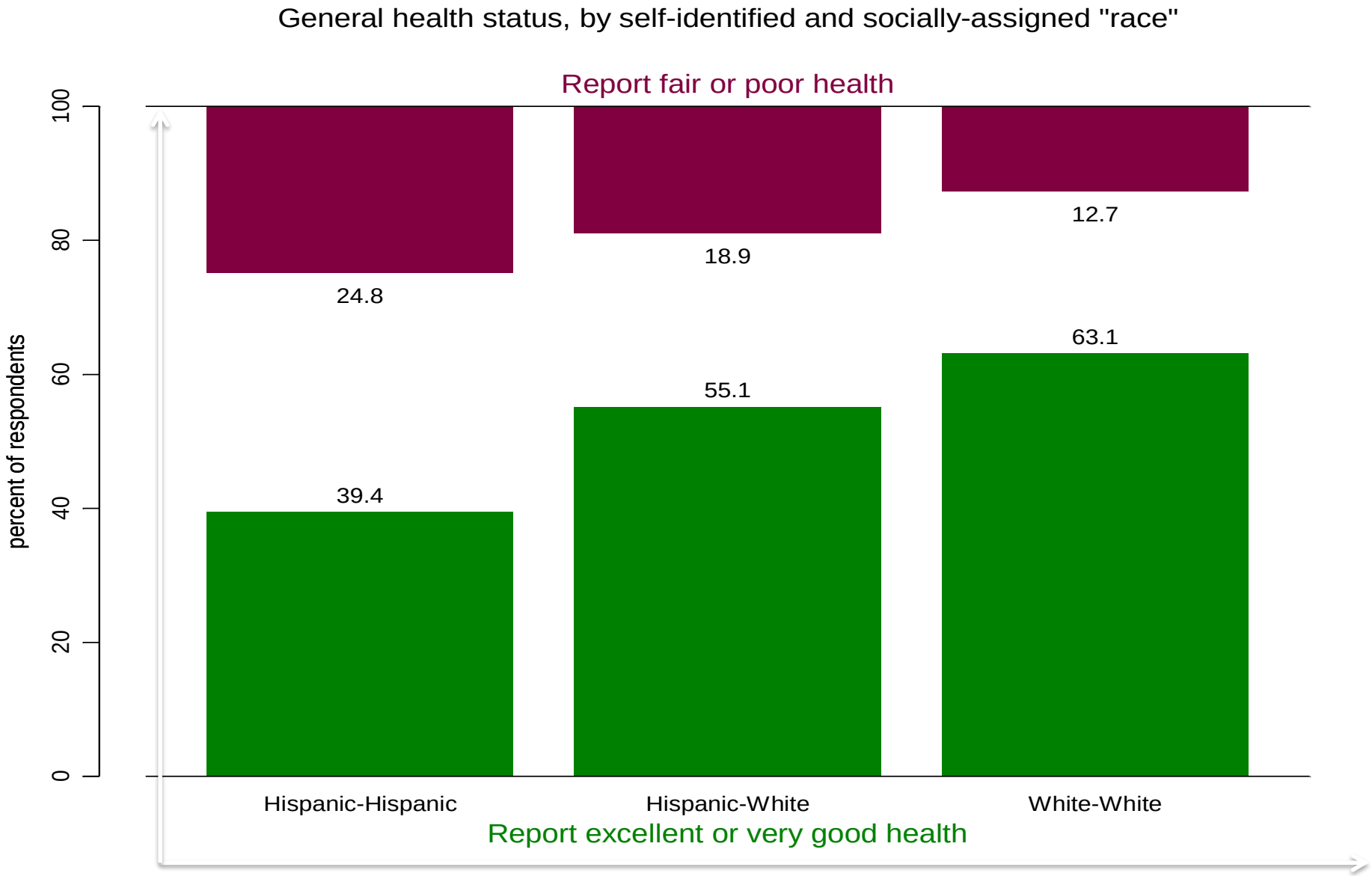


LaVeist TA. *Ethn Dis*. 1996; 6(1-2):21-9.

Socially-assigned race

US: Black

Brazil: White



Jones CP, Truman BI, Elam-Evans LD, et al. *Ethnicity & Disease*. 2008;18(4):496-504

Table 2. Percent of the population whose general health status is excellent or very good, by self-identified race/ethnicity and socially assigned race

Self-identified "race"/ethnicity	Socially assigned race: White	Black	Hispanic	Am Indian	Asian	NHOPI	Other	Row marginals
White								
% excellent or very good	58.6		50.3				49.2	58.4
95% confidence interval	*57.8–59.5*		*36.1–64.4*				*34.6–63.9*	*57.6–59.3*
Black								
% excellent or very good		44.3						44.0
95% confidence interval		*42.3–46.2*						*42.1–45.9*
Hispanic								
% excellent or very good	53.7	44.4	39.8					43.7
95% confidence interval	*46.2–60.9*	*28.9–61.2*	*35.3–44.6*					*40.0–47.4*
American Indian								
% excellent or very good	52.6			32.0				42.4
95% confidence interval	*41.3–63.8*			*21.8–44.3*				*34.7–50.5*
Asian								
% excellent or very good					60.6			62.6
95% confidence interval					*49.7–70.5*			*53.2–71.1*
NHOPI								
% excellent or very good								
95% confidence interval								
Other								
% excellent or very good	50.4							45.6
95% confidence interval	*35.8–64.9*							*36.1–55.5*
More than one race								
% excellent or very good	53.5	30.7						45.7
95% confidence interval	*44.3–62.5*	*19.7–44.4*						*38.6–53.0*

Jones CP, Truman BI, Elam-Evans LD, et al. *Ethnicity & Disease*. 2008;18(4):496-504

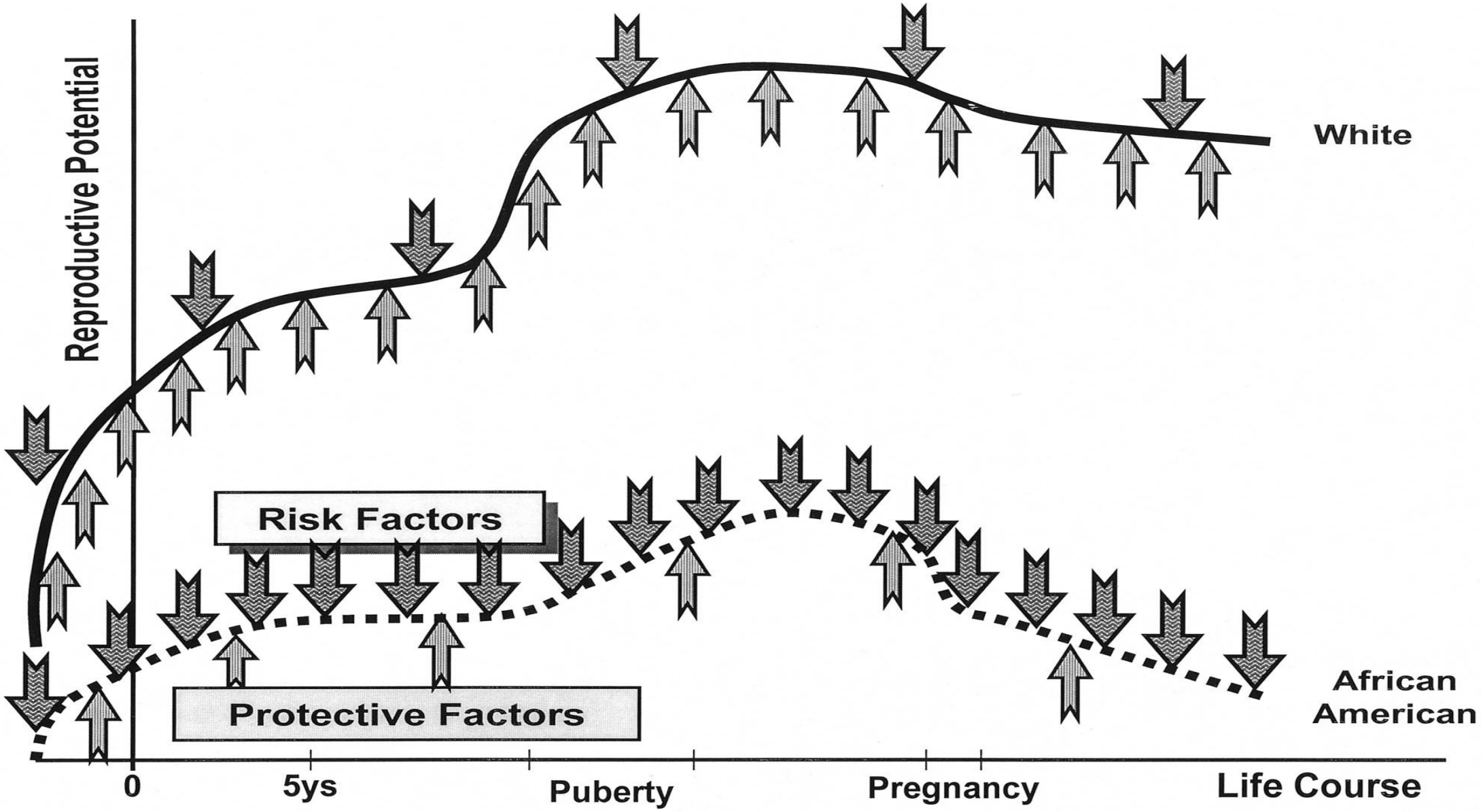
Racism and Discrimination Defined

Racism is an **organized system** premised on the categorization and ranking of social groups into races and devalues, disempowers, and differentially allocates desirable societal opportunities and resources to racial groups regarded as inferior (Bonilla-Silva, 1996; D. Williams, 2004).

Racism often leads to the development of negative **attitudes** (prejudice) and **beliefs** (stereotypes) toward non-dominant, stigmatized racial groups and **differential treatment** (discrimination) of these groups by both individuals and social institutions.

The Lifecourse

Lu and Halfon, 2003



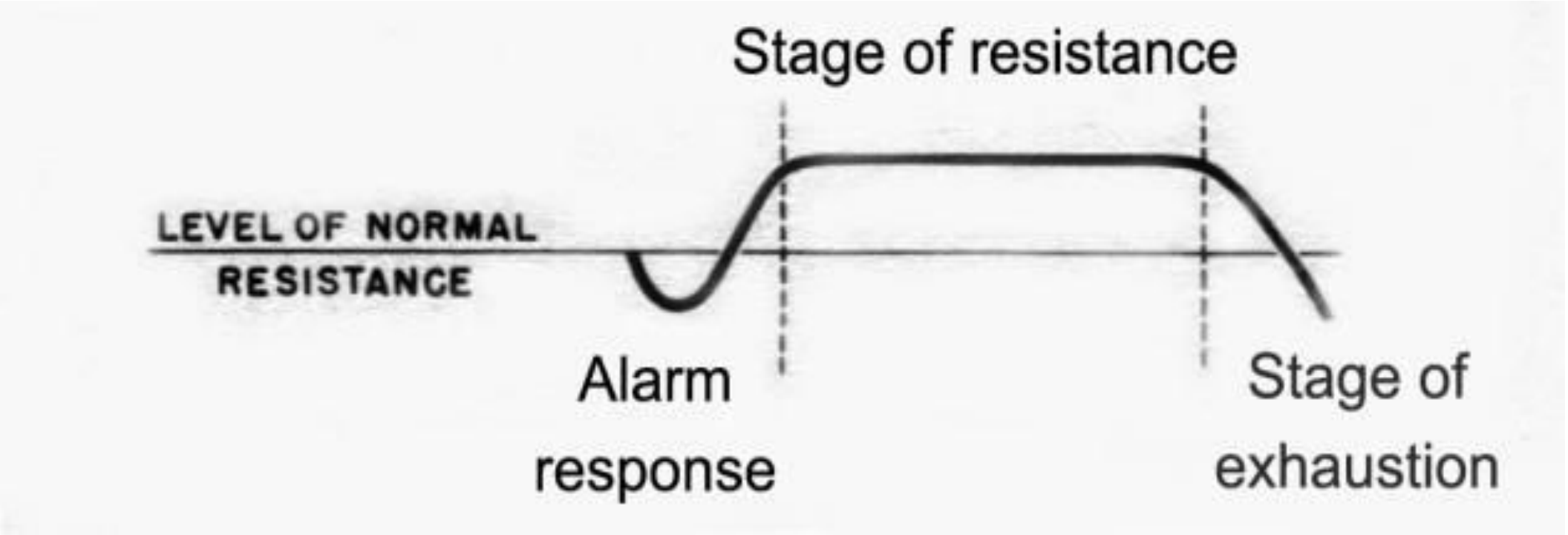
Generalized Susceptibility

"Do we not always find the diseases of the populace traceable to ***defects in society?*** No matter whether meteorological conditions, general cosmic changes…never do these in themselves make epidemics, they only induce them whenever, through poor social conditions, ***the people have lived under abnormal conditions for a long time***"

~ Rudolph Virchow, 1849

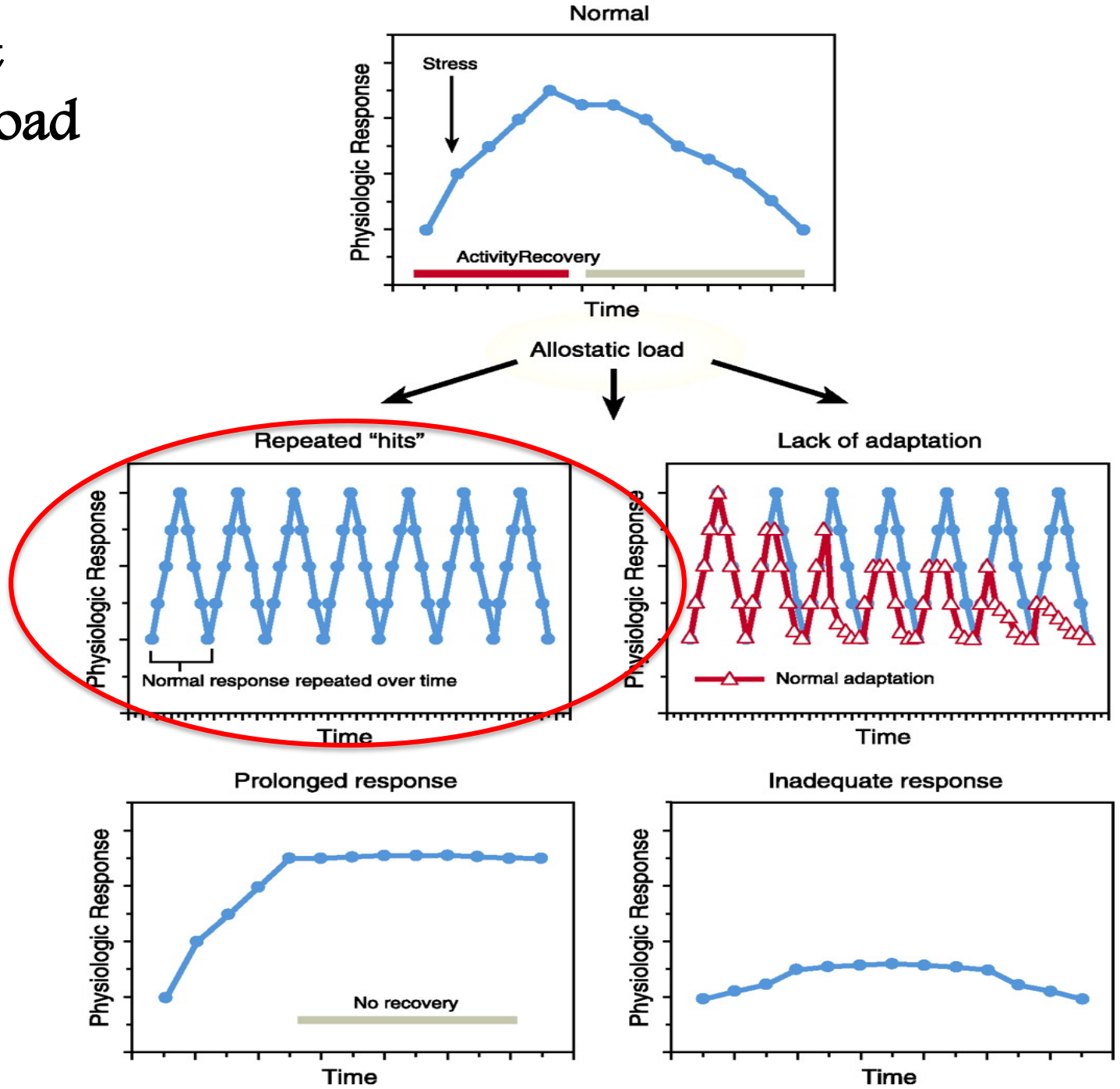
Stress

General Adaptation Syndrome
"fight or flight"



H Selye, 1954

Allostasis & Allostatic Load



~ McEwen, 1999

Example: Cortisol

- Allostasis
  - Glucose metabolism
  - Blood pressure regulation
  - Immune function
  - Inflammatory response

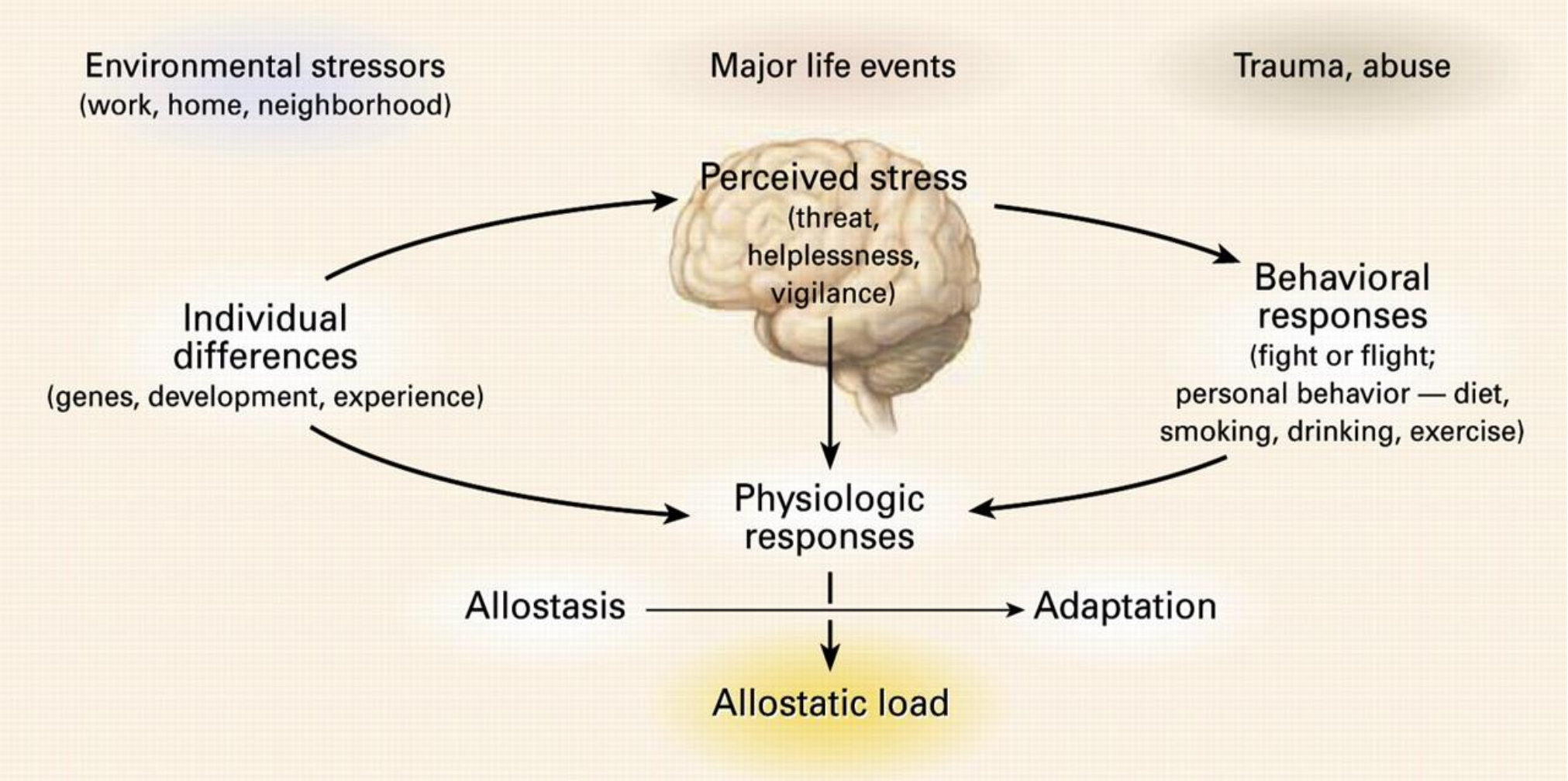
- Dysregulation
  - Impaired cognitive fn
  - Blood-sugar imbalance
  - Hbp
  - Immune suppression
  - Adrenal failure
  - Abdominal fat → heart attack, stroke
  - ↑ LDL
  - Decreased bone density

Stress

Stress is a *process* "in which environmental demands tax or exceed the *adaptive capacity* of an organism, resulting in psychological and biological changes that may place a person at risk for disease."

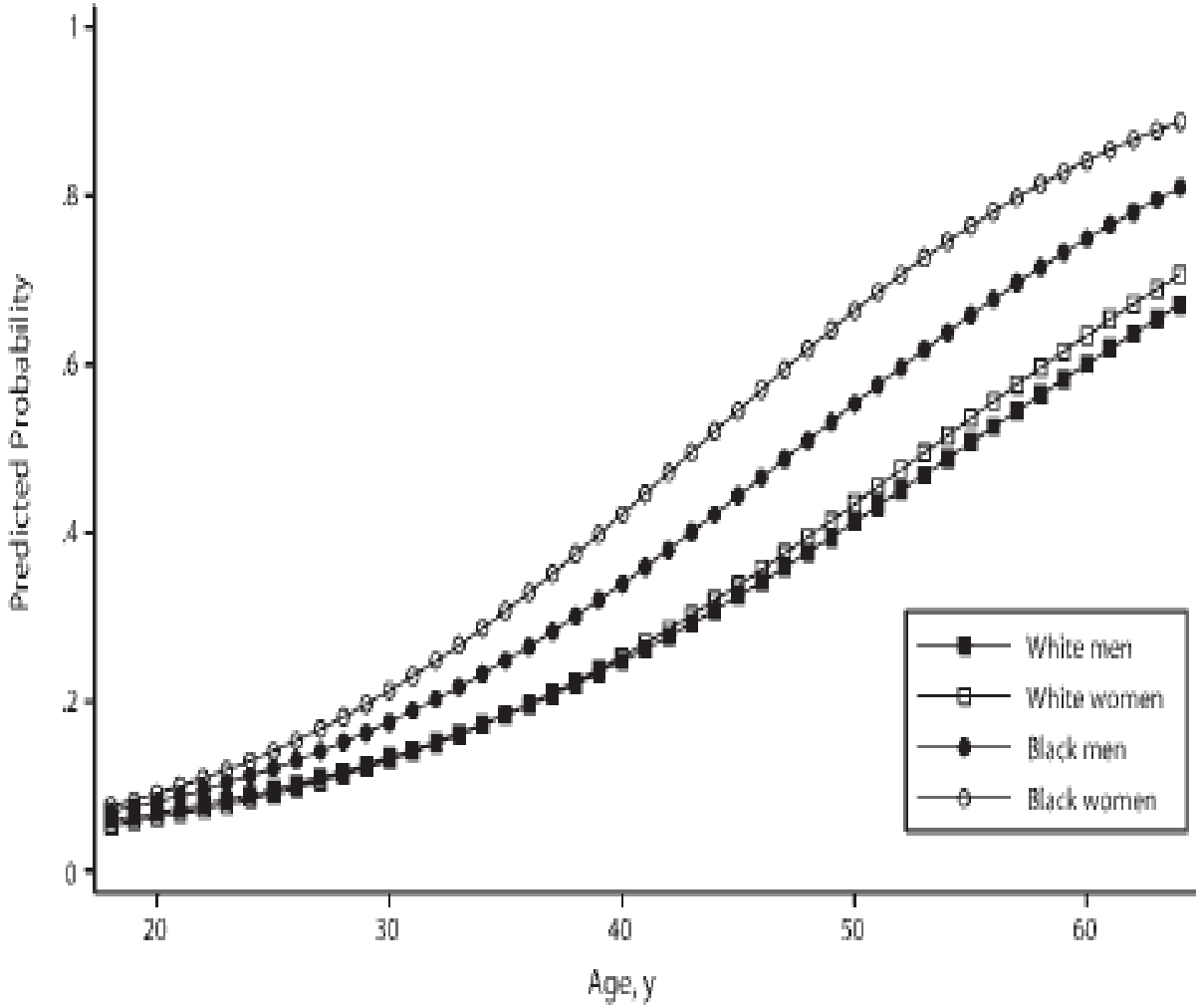
- Lazarus & Folkman, 1984

The Stress Response *Process*



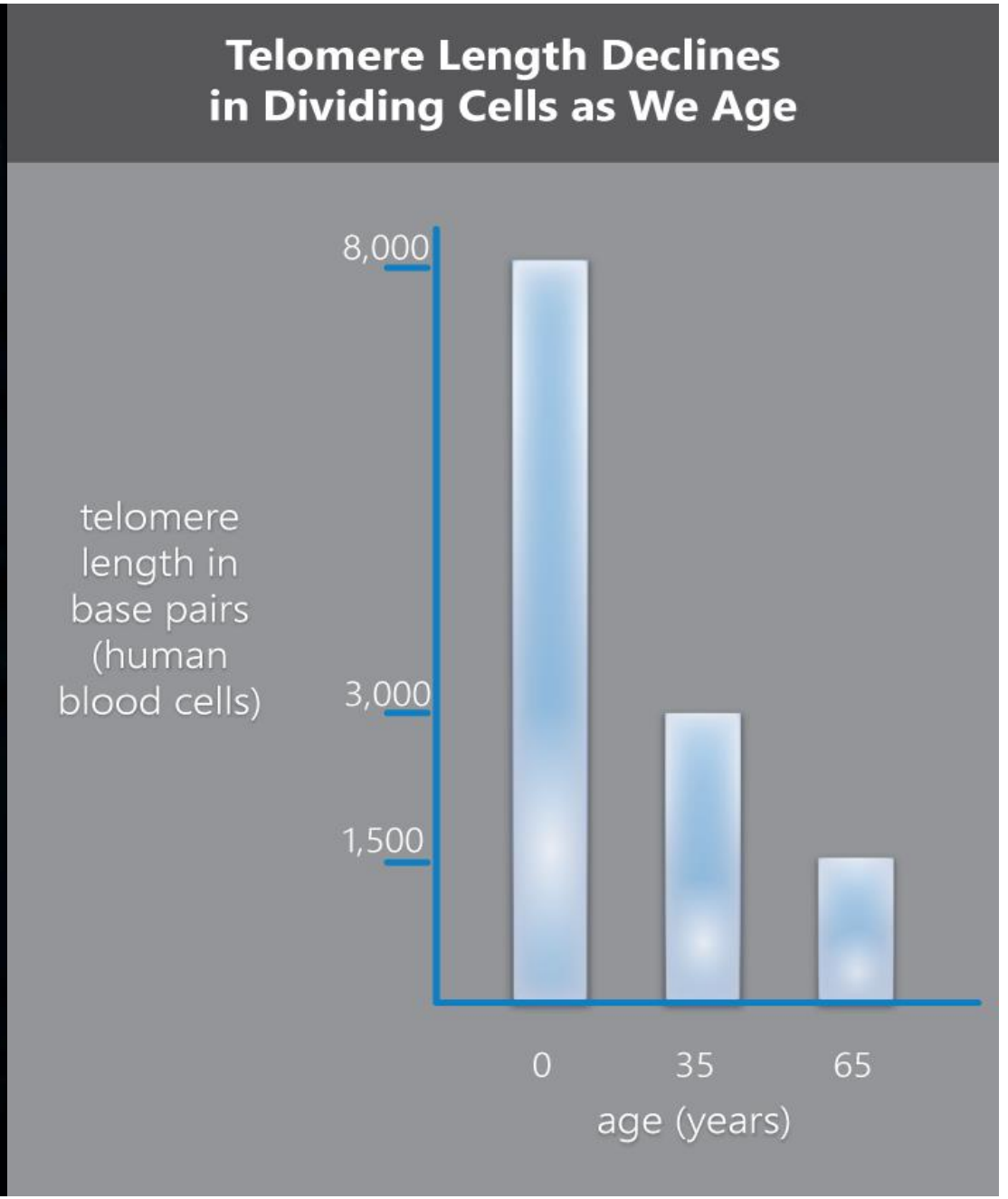
McEwen, 1999

Gendered Racism & "Weathering"

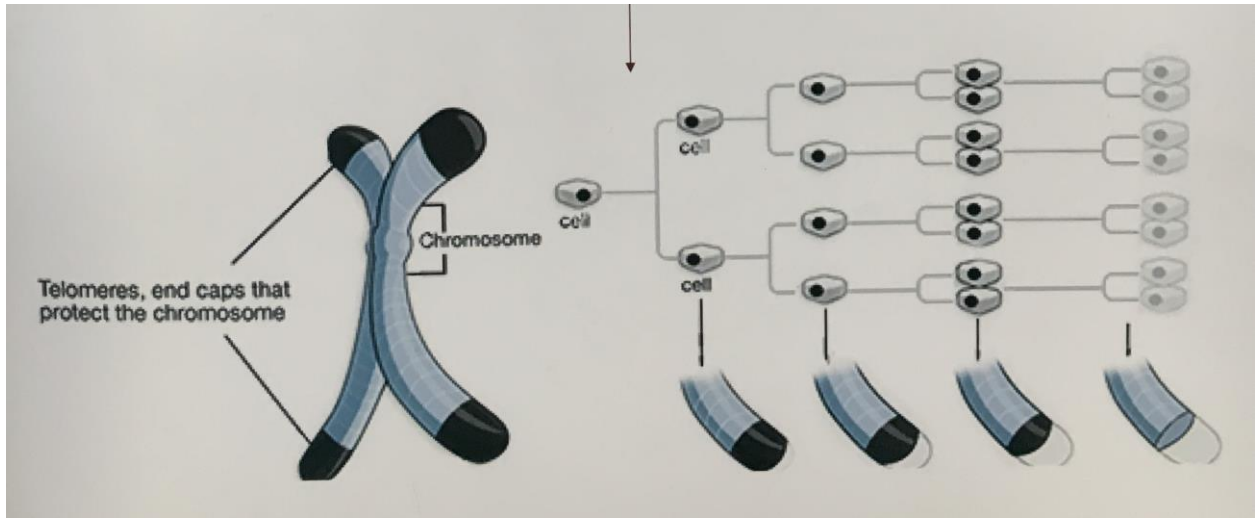


Geronimus et al., 2006

- Black women up to 5X higher odds of allostatic load compared to White men and women and Black men
- Higher psychosocial stress among women vs. men
- "Weathering": early physiologic aging associated with chronic social stress


Telomere Length Declines
in Dividing Cells as We Age
telomere length in base pairs (human blood cells)
8,000
3,000
1,500
0
35
65
age (years)

Race and gender differences in Telomeres



- Black women 49-55 are 7.5 years older biologically than white women (Geronimus 2010)

- Black men 30-50 with an anti-black bias and who report higher levels of racial discrimination are 2.5 years older (Chae, Nuru-Jeter et al, 2014)

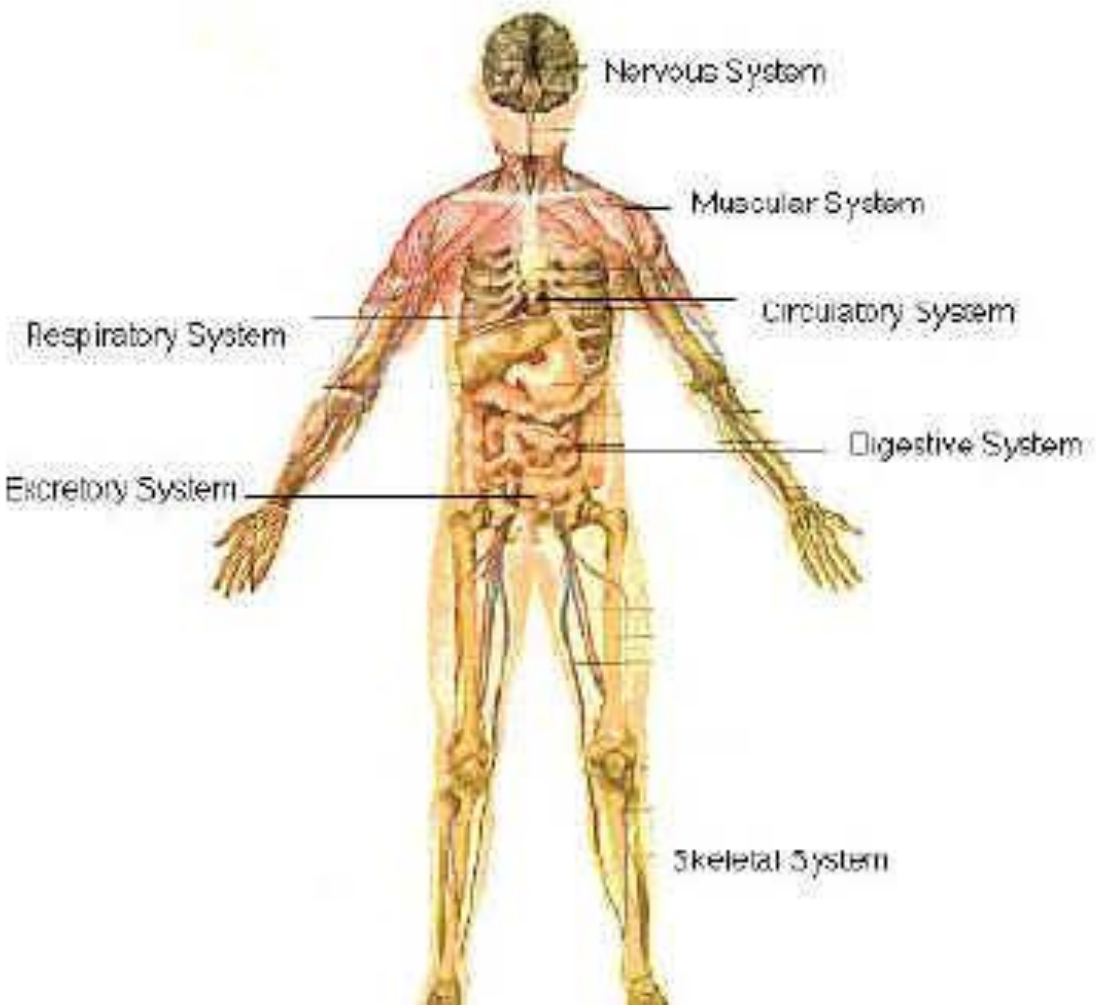
Prevalence of most common CVDs and related disorders in adults ages 20+ by race and gender, United States

Prevalence	African American Women %	African American Men %	White Men %	White Women %	Latino Men %	Latino Women %
All CVD	46.9	44.6	38.1	34.4	28.5*	34.5*
CVD Deaths	35.9	32.3	33.3	35.3	27.0	31.5
Coronary Heart Disease	8.8	7.8	9.4	6.9	5.3*	6.6*
Hypertension	44.8	43.0	34.3	31.1	25.9*	31.6*
Stroke	4.3	3.8	2.3	3.1	2.8*	3.1*
Congestive Heart Failure	3.6	3.0	3.2	2.1	1.7*	1.8*
End-Stage Renal Disease†	8.0	7.8	3.0	2.2		
Hypertension Deaths	37.7	51.1	15.6	14.3		

Source: Heart Disease and Stroke Statistics, 2010 Update, American Heart Association; Kiberd B. The Chronic Kidney Disease Epidemic. J Am Soc Nephrol 2006;17:2967-2973. *Percentages are for Mexican-Americans; †Lifetime risk estimated using 2003 data; Prevalence estimates for Asians lowest of all groups; Estimates for Pacific Islanders and Native Americans/Alaska Natives unreliable.

How Does "Race" Get Into the Body?

Race x Gender →



?

Stress and CVD

- Black women are ranked among the most at-risk groups for CVD in the U.S.
- Chronic stress plays a role in the etiology and progression of CVD (Black et al 2002; Toth 2008)
- Chronic stress linked with CVD via pro-inflammatory mediators. Psychosocial pathways unclear! (Black et al 2002)
- Focus on physiologic mechanisms with limited attention to the psychosocial processes regulating these mechanisms.

Racism Stress and CVD?

- Racism a ***chronic*** stressor among Black women (Krieger 1991, Krieger and Sidney 1996, Cozier et al 2006)
- Black women report greater distress from racism than Black men (Brown et al 2000)
- Black women use unique cognitive appraisal strategies and coping styles (Nuru-Jeter et al 2009; Woods-Giscombe 2010)
- Integrated specificity: stress exposure x stress appraisal x coping = distinct physiologic stress response (Kemeny 2003)

Measures of Racism & Social Status Project (MORS)

Nuru-Jeter A, Dominguez TP, Hammond WP, Leu J, Skaff M, Egerter S, Jones CP, Braveman P. *"It's the Skin You're In"*: African American Women Talk about Their Experiences of Racism. *Matern Child Health J.* 2009; 13(1):29-39.

Over the lifecourse/chronic

"I think that the most difficult thing that, that I faced was when I was eight years old, and when ***I had to learn*** that um, we weren't all equal…I don't even think I knew the difference between black and white… I used to play with this white girl everyday, like she was like my best friend...she would always come to my auntie's house. And then, there was one time where I went to her house, and she said, 'Well, my parents said we can't allow anybody black in the house.' And…, that's somethin' that always, um, ***stayed with me my whole life*** …and that was really, for a little kid… heartbreaking, you know? And that's when I ***first learned*** that there is a difference you know, with the colors. I thought about it a lot. ***I still think about it***."

-San Francisco, low SES

Concern for children/micro-aggressions/ ignore/self-neglect

"I'm stressed because now that my kids are getting older…they go through it all the time… I take that in internally. ***It's subtle***, it's not out in the open like slavery days, it's like hidden, but you feel it still…as adults it seems like I could ***overlook it***…But you have kids coming home everyday, oh he called me a nigger or black. That affects you as a parent … ***I go through the hurt when they go through the hurt.***"

~ Sacramento, high SES

Anticipatory vigilance/Emotion suppression

"it's like ***you get tense***. Because you know…I know this person is going to say something that's going to make me, my heart rate [go up], or maybe have to hold back my tears while I'm talking to them. ***I don't want them seeing me crying***, cause I don't want them thinking I'm sad, I'm not sad, I'm mad… you just get tense, cause you know you have to ***brace yourself*** for something stupid that they're gonna say… with a White person, you know that some level of racism is going to hop out of their mouth…and so you have to ***prepare your body for that***."

~ Oakland, high SES

Suppression/acceptance/try harder

- "Realistically, it's going to affect you…it does bother you, you just ***put it in a different place***."

  ~ *Berkeley, low SES*

- "I think that when it happens to you so much that you not necessarily ***learn to accept it***, but *you* learn to not trip off of it no more."

  ~ *Oakland, low SES*

- "You've just got to ***work harder*** I guess." ~ *Oakland, low SES*

- "I don't think I really think about it. I just know ***it's the skin you're in***. It's ***just another part of your life***."

  ~ *San Francisco, low SES*

Impression management

- "To this day when I'm talking to people other than black I say 'father' instead of 'fathers'"

  ~ *Berkeley, high SES*

- "***I prepare myself*** …it's like I will take forever to find me *something to wear* because I feel I'm not going to be treated right when I go shopping…and I feel I shouldn't have to do that, but I do that because I'm treated different."

  ~ *Sacramento, high SES*

Physical signs of stress

- "My heart starts beating fast."

~ San Francisco, low SES

- "My stomach. My, like my baby. I know my baby is stressed out… My stomach is in a knot when I come over here."

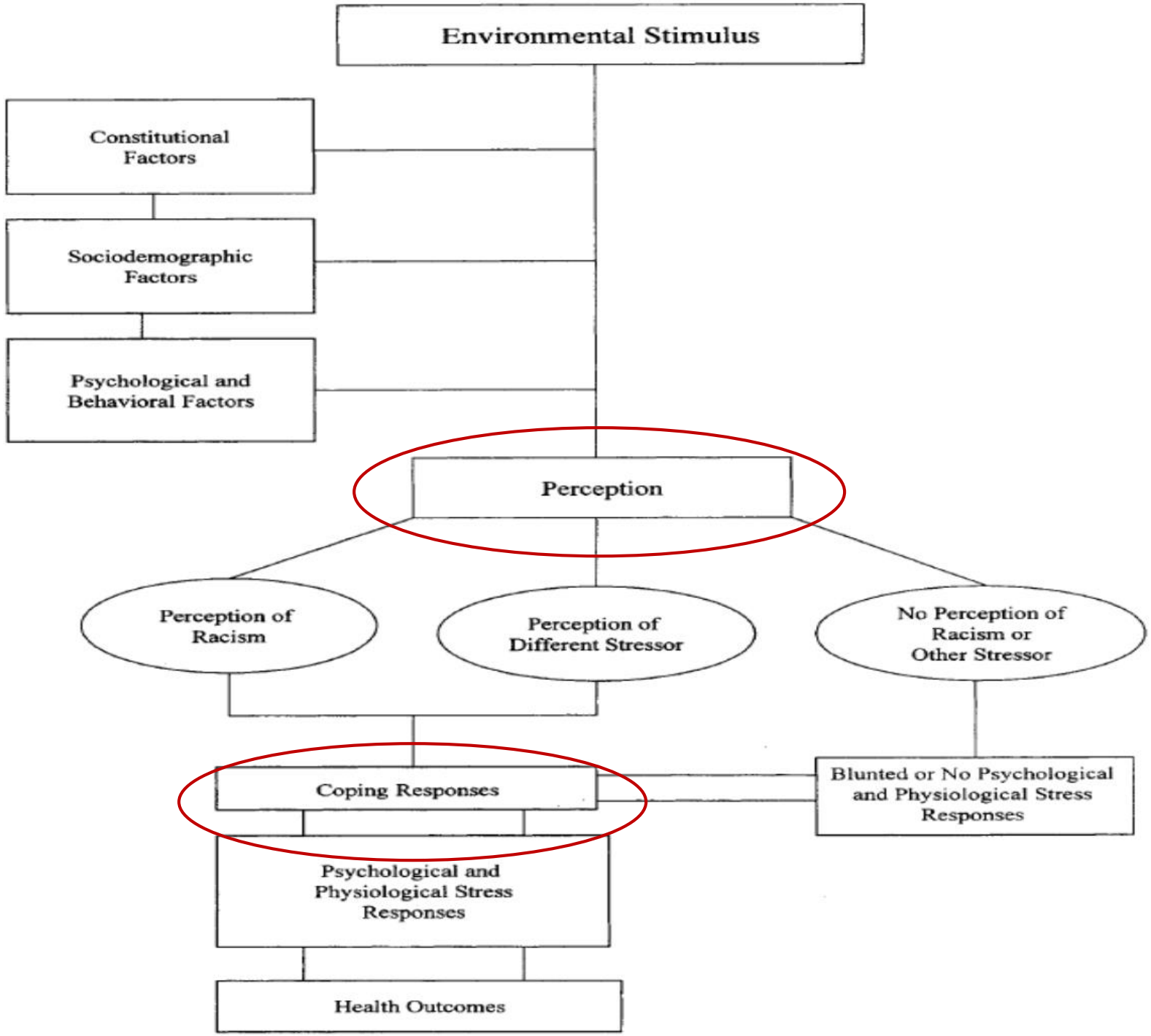
~ San Francisco, low SES

- "I get a stomach ache, I've broken out."

~ Oakland, high SES

Biopsychosocial Model of Racism Stress

Clark et al. 1999



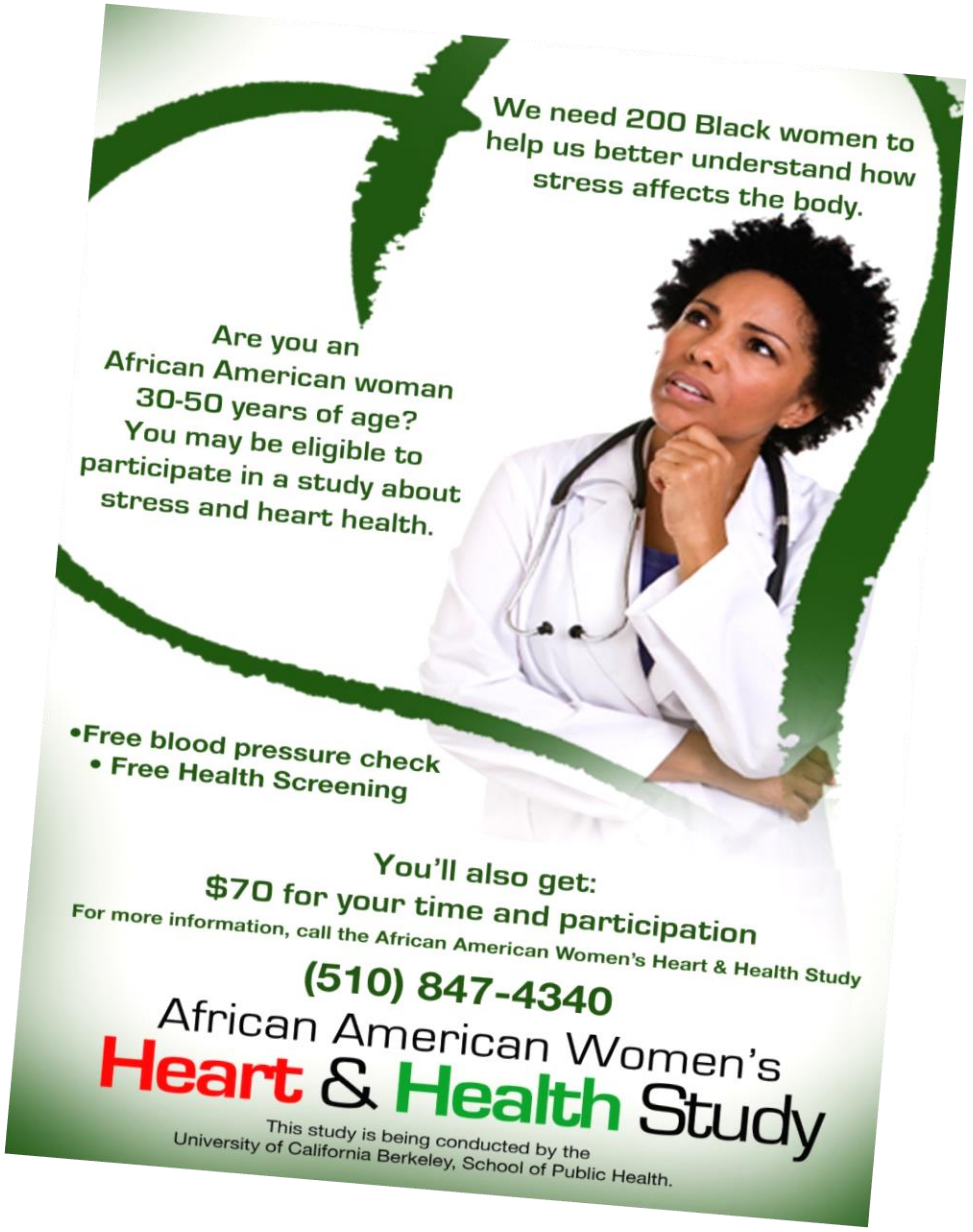
African American Women's Heart & Health Study

- Study Aim: examine the association between chronic social stress and both mental and physical health among African American women in the SF bay area.

- Stress framework
  - ❖exposure → appraisal →response

- Mixed methods study

- How do Black women manage their racism experiences?



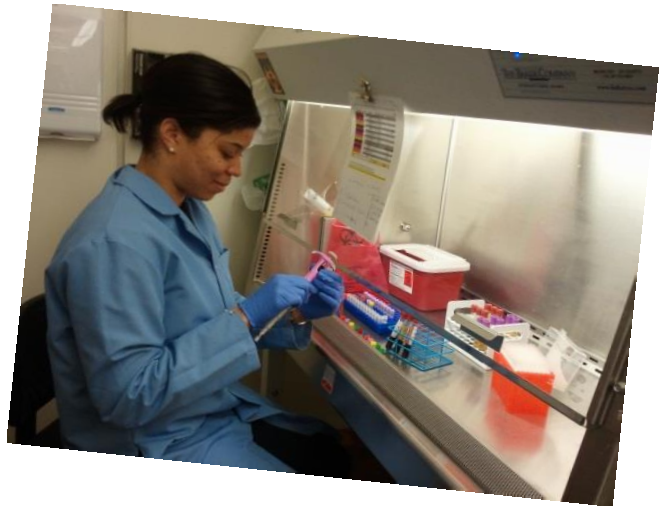
Recruitment & study sample

- Community sample of 200 AA women ages 30-50, San Francisco Bay area
- Purposive sample
- Multi-strategy recruitment
  - Street-canvassing
  - Targeted neighborhood sampling
  - Event sampling (concerts, festivals, etc.)
  - Venue-based sampling (nail/hair shops, restaurants, churches, farmer's markets)
  - Facebook/Twitter/project website
  - Snowball sampling
  - Organization sampling (100 Black women, NPHA, etc.)

Study procedures

- **Screening and enrollment**

- **Visit #1**
  - Informed consent
  - Interviewer-administered questionnaire
  - Computer-assisted self-interview



- **Visit #2**
  - Fasting visit (& no smoking or exercise)
  - Health screening (height, weight, waist/hip circumference, blood pressure, BMI, body fat %)
  - Blood draws (stress reactivity, CV biomarkers, etc.)

- **Participant incentives**
  - $70 Visa gift card
  - Healthy eating cookbook
  - Health education materials

Study Measures

- **Self-reported racial discrimination**
  - Everyday Discrimination Scale
  - Experiences of Discrimination Scale
  - Lifecourse discrimination experiences
  - Direct/Vicarious
  - Anticipatory vigilance
  - Concern for children

- **Psychosocial measures**
  - Stereotype Threat
  - Superwoman Schema
  - Racial identity
  - Racial socialization
  - Internalized racism
  - Perceived social stress
  - John Henryism
  - Coping
  - Health behaviors
  - Mental health outcomes

- **Physical health outcomes**
  - Blood pressure
  - BMI, Body fat %
  - Waist and hip circumference
  - Biomarkers
    - Diabetes risk (eg, insulin resistance)
    - CV risk (CRP, IL-6)
    - Stress hormones(Cortisol, epinephrine)
  - Self-reported physical health status
  - Self-reported mental health status
  - Chronic medical conditions
  - Depression/anxiety/psych distress

- **Sociodemographics**
  - Age, income, wealth, perceived financial hardship over the lifecourse, education, subjective social status, marital status, employment, health insurance, zip code, etc.

Where we are now…

David

Eli

Marilyn

Rebecca

Alexis

Amani et al

Katie

Yijie

Uche

Youchuan

Saba

Racial Discrimination, Educational Attainment and Biological Dysregulation among Midlife African American Women

Allen AM, Thomas MD, Michaels EK, Reeves AN, Okjoye U, Price MM, Hasson RE, Syme SL, Chae DH. *Psychoneuroendocrinology*. 2019;99:225-235.

Study aims

- To examine the association between racial discrimination and biological dysregulation, and

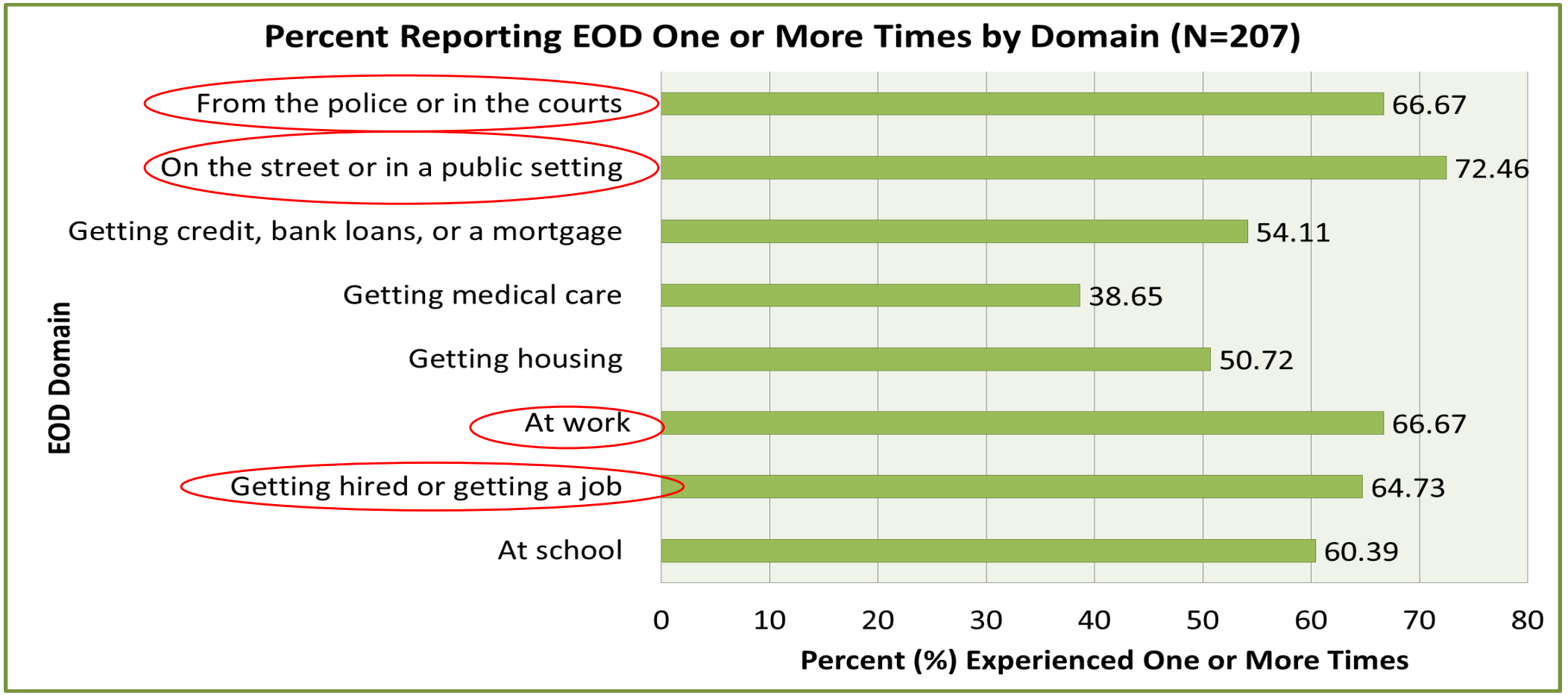
- Test whether the association is attenuated among higher (vs. lower) socioeconomic groups.

Experiences of Discrimination (EOD) Scale

- Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your race, ethnicity, or color?
  - At school
  - Getting hired or getting a job
  - At work
  - Getting housing
  - Getting medical care
  - Getting service in a store or restaurant
  - Getting credit, bank loans, or a mortgage
  - On the street or in a public setting
  - From the police or in the courts

Krieger N

Sample distribution: EOD



Allostatic Load (AL)

Biomarker	*AL_{75} Cutpoints*	*AL_{90} Cutpoints*	*AL_{IQR} Cutpoints*		
			Low Risk	*Moderate Risk*	*High Risk*
Metabolic System					
HDL (mg/dL)	<50	<40	≥50	≥40 & <50	<40
LDL (mg/dL)	≥100	≥130	<100	≥100 & <130	≥130
Waist Circumference (in)	>35	>49	<35	≥35 & ≤45	>45
Glucose (mg/dL)	≥100 *or* <70	≥126 *or* <70	≥70 *or* <100	≥100 & <126	≥126 *or* <70
HbA1c (mmol/mol)	≥5.7	≥6.5	<5.7	≥5.7& <6.5	≥6.5
Total Cholesterol (mg/dL)	≥160	≥200	<160	≥160 & <200	≥200
Triglycerides (mg/dL)	≥150	≥200	<150	≥150 & <200	≥200
BMI (kg/m^2)	≥25 *or* <18.5	≥30 *or* <18.5	≥18.5 *or* <25	≥25 & <30	≥30 *or* <18.5
Cardiovascular System[d]					
Systolic BP (mm Hg)	≥120	≥140	<120	≥120 & <140	≥140
Diastolic BP (mm Hg)	≥80	≥90	<80	≥80 & <90	≥90
Neuroendocrine System					
Cortisol (µg/dL)	>12.69	>17.32	≤7.36	>7.36 & ≤12.69	>12.69
Epinephrine (pg/mL)	>77.70	>120	≤47.35	>47.35 & ≤77.70	>77.70
Norepinephrine (pg/mL)	>686.30	>848.95	≤404.40	>404.40 & ≤686.30	>686.30
Inflammatory System					
Il-6 (pg/mL)	>7.85	>17.8	≤1	>1 & ≤7.85	>7.85
hsCRP (mg/L)	>3	>9.64	<1	≥1 & ≤3	>3

Allostatic Load (AL)

Biomarker	AL_{75} *Cutpoints*	AL_{90} *Cutpoints*	AL_{IQR} *Cutpoints*		
			Low Risk	*Moderate Risk*	*High Risk*
Metabolic System					
HDL (mg/dL)	<50	<40	≥50	≥40 & <50	<40
LDL (mg/dL)	≥100	≥130	<100	≥100 & <130	≥130
Waist Circumference (in)	>35	>49	<35	≥35 & ≤45	>45
Glucose (mg/dL)	≥100 *or* <70	≥126 *or* <70	≥70 *or* <100	≥100 & <126	≥126 *or* <70
HbA1c (mmol/mol)	≥5.7	≥6.5	<5.7	≥5.7& <6.5	≥6.5
Total Cholesterol (mg/dL)	≥160	≥200	<160	≥160 & <200	≥200
Triglycerides (mg/dL)	≥150	≥200	<150	≥150 & <200	≥200
BMI (kg/m^2)	≥25 *or* <18.5	≥30 *or* <18.5	≥18.5 *or* <25	≥25 & <30	≥30 *or* <18.5
Cardiovascular System[d]					
Systolic BP (mm Hg)	≥120	≥140	<120	≥120 & <140	≥140
Diastolic BP (mm Hg)	≥80	≥90	<80	≥80 & <90	≥90
Neuroendocrine System					
Cortisol (µg/dL)	>12.69	>17.32	≤7.36	>7.36 & ≤12.69	>12.69
Epinephrine (pg/mL)	>77.70	>120	≤47.35	>47.35 & ≤77.70	>77.70
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			Low Risk	*Moderate Risk*	*High Risk*
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LDL (mg/dL)	≥100	≥130	<100	≥100 & <130	≥130
Waist Circumference (in)	>35	>49	<35	≥35 & ≤45	>45
Glucose (mg/dL)	≥100 *or* <70	≥126 *or* <70	≥70 *or* <100	≥100 & <126	≥126 *or* <70
HbA1c (mmol/mol)	≥5.7	≥6.5	<5.7	≥5.7& <6.5	≥6.5
Total Cholesterol (mg/dL)	≥160	≥200	<160	≥160 & <200	≥200
Triglycerides (mg/dL)	≥150	≥200	<150	≥150 & <200	≥200
BMI (kg/m^2)	≥25 *or* <18.5	≥30 *or* <18.5	≥18.5 *or* <25	≥25 & <30	≥30 *or* <18.5
Cardiovascular System[d]					
Systolic BP (mm Hg)	≥120	≥140	<120	≥120 & <140	≥140
Diastolic BP (mm Hg)	≥80	≥90	<80	≥80 & <90	≥90
Neuroendocrine System					
Cortisol (µg/dL)	>12.69	>17.32	≤7.36	>7.36 & ≤12.69	>12.69
Epinephrine (pg/mL)	>77.70	>120	≤47.35	>47.35 & ≤77.70	>77.70
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LDL (mg/dL)	≥100	≥130	<100	≥100 & <130	≥130
Waist Circumference (in)	>35	>49	<35	≥35 & ≤45	>45
Glucose (mg/dL)	≥100 *or* <70	≥126 *or* <70	≥70 *or* <100	≥100 & <126	≥126 *or* <70
HbA1c (mmol/mol)	≥5.7	≥6.5	<5.7	≥5.7& <6.5	≥6.5
Total Cholesterol (mg/dL)	≥160	≥200	<160	≥160 & <200	≥200
Triglycerides (mg/dL)	≥150	≥200	<150	≥150 & <200	≥200
BMI (kg/m^2)	≥25 *or* <18.5	≥30 *or* <18.5	≥18.5 *or* <25	≥25 & <30	≥30 *or* <18.5
Cardiovascular System[d]					
Systolic BP (mm Hg)	≥120	≥140	<120	≥120 & <140	≥140
Diastolic BP (mm Hg)	≥80	≥90	<80	≥80 & <90	≥90
Neuroendocrine System					
Cortisol (µg/dL)	>12.69	>17.32	≤7.36	>7.36 & ≤12.69	>12.69
Epinephrine (pg/mL)	>77.70	>120	≤47.35	>47.35 & ≤77.70	>77.70
Norepinephrine (pg/mL)	>686.30	>848.95	≤404.40	>404.40 & ≤686.30	>686.30
Inflammatory System					
Il-6 (pg/mL)	>7.85	>17.8	≤1	>1 & ≤7.85	>7.85
hsCRP (mg/L)	>3	>9.64	<1	≥1 & ≤3	>3

AAWHHS Sample Characteristics (n=208)

HIGH RISK COVARIATES	n	%
Age (mean, SD)†	41.72	5.90
≤ High School Diploma	69	33.33
≤ 100% FPL	39	18.84
Not Employed	93	44.93
Not Insured	55	26.57
Not Married/Domestically Partnered	146	70.53
Smoker	89	43.00
≥ 3 Alcoholic Drinks/Day	38	18.36
< 5 Physical Activity/Week	133	64.25
Currently Taking CV Medication	43	20.77
Currently Taking DM Medication	12	5.80
Neuroticism (mean, SD)†	3.08	0.75

† Not a high risk value

Results

Table 2. Study Sample Discrimination Characteristics

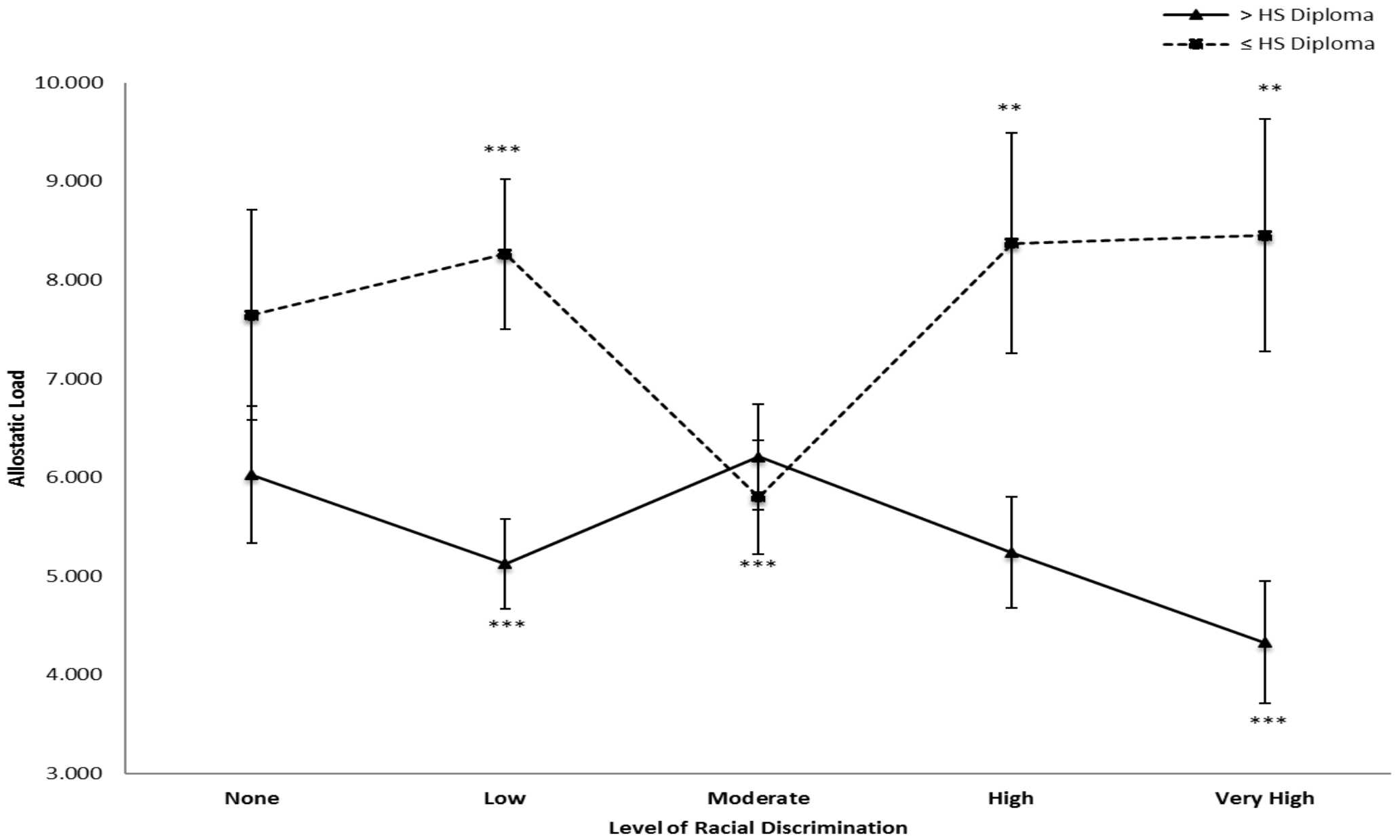
RACIAL DISCRIMINATION	**n**	**%**
Experiences of Discrimination Scale (EOD)		
None (EOD score: 8)	22	10.63
Low (EOD score: 9-16)	71	34.30
Moderate (EOD score: 17-24)	63	30.43
High (EOD score: 25-32)	29	**14.01**
Very High (EOD score: 33-40)	22	**10.63**

Results

Table 3. Study Sample Physiologic Characteristics

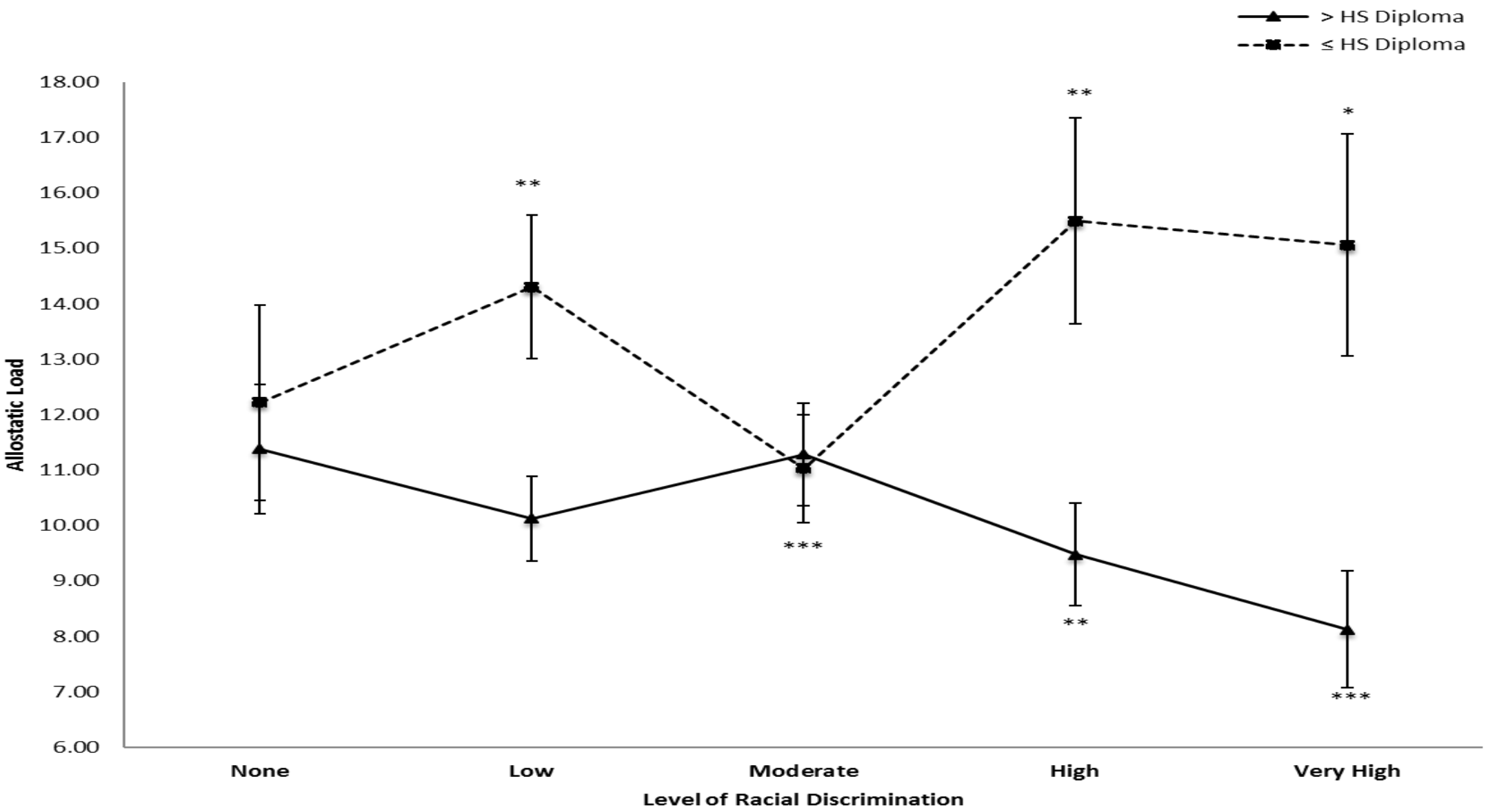
ALLOSTATIC LOAD MEASURES		**mean**	**SD**
	AL_{75}	**6.10**	2.18
	AL_{90}	**2.32**	1.58
	AL_{IQR}	**11.45**	3.82
SYSTEM-SPECIFIC MEASURES		**n**	**%**
Inflammatory System			
	Very Low Risk	33	14.98
	Low Risk	39	18.84
	Moderate Risk	77	37.20
	High Risk	60	28.99
Neuroendocrine System			
	Low Risk	86	41.55
	Moderate Risk	93	44.93
	High Risk	28	13.53
Cardiovascular System			
	Low-risk on both diastolic and systolic BP	88	42.51
	High-risk on systolic BP only	20	9.66
	High-risk on diastolic BP only	21	10.14
	High-risk on both diastolic BP and systolic BP	78	37.68
Metabolic System (mean, SD)		3.61	1.45

Linear Regression of Allostatic Load (AL_{75}) and Racial Discrimination by Level of Education (n=206)



*Note: Reference group is moderate. *p<0.10, **p<0.05, ***p<0.01*

Linear Regression of Allostatic Load (AL_{IQR}) and Racial Discrimination by Level of Education (n=206)



*Note: Reference group is moderate. *p<0.10, **p<0.05, ***p<0.01*

Racial Discrimination and Allostatic Load among African American Women: *Differential Impacts of Routine vs. Non-routine Experiences*

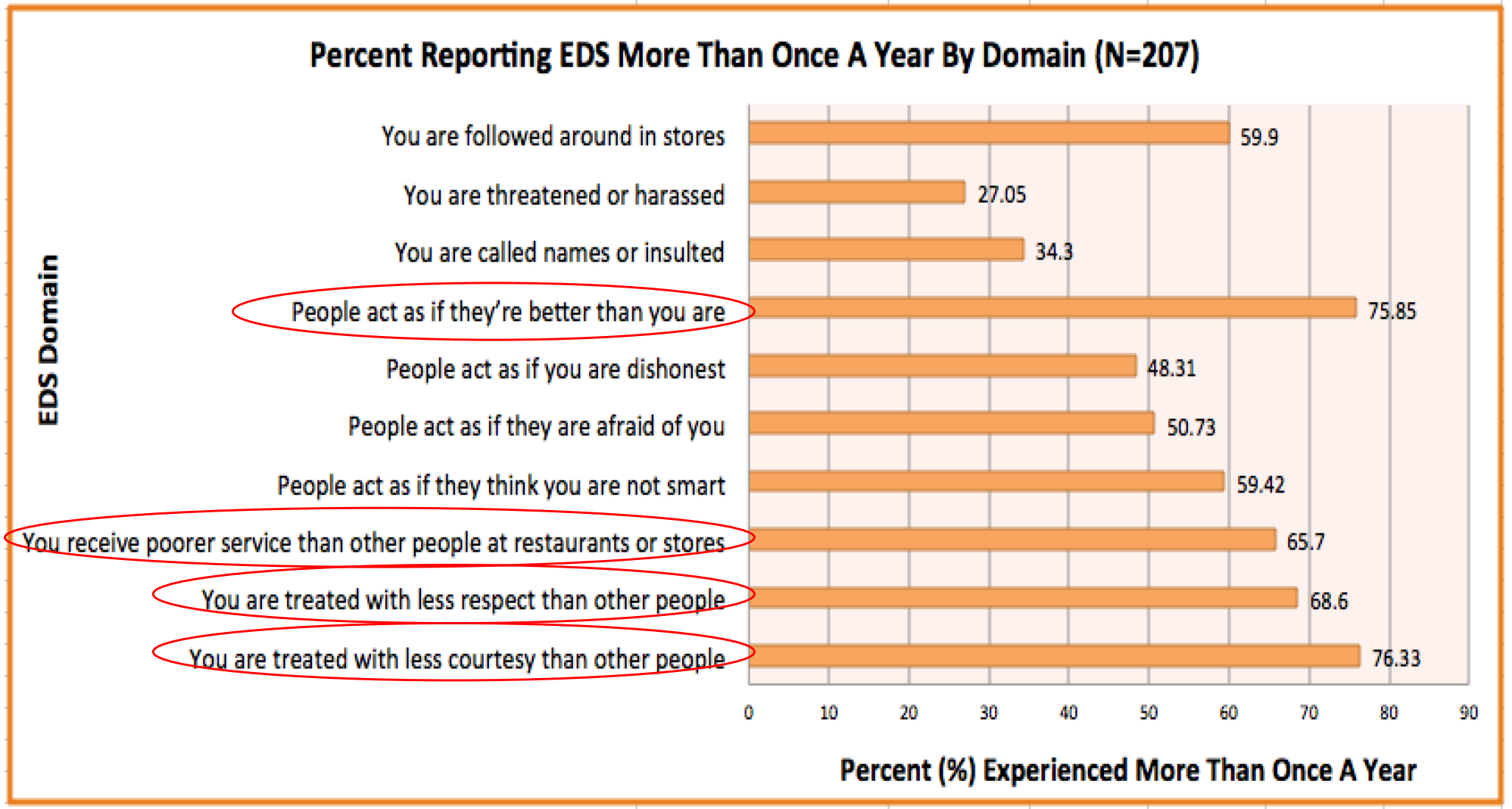
Marilyn D. Thomas, Elizabeth (Eli) Michaels, Alexis Reeves, Uche Okoye, David H. Chae, Amani M. Allen

Everyday Discrimination (EDS) Scale

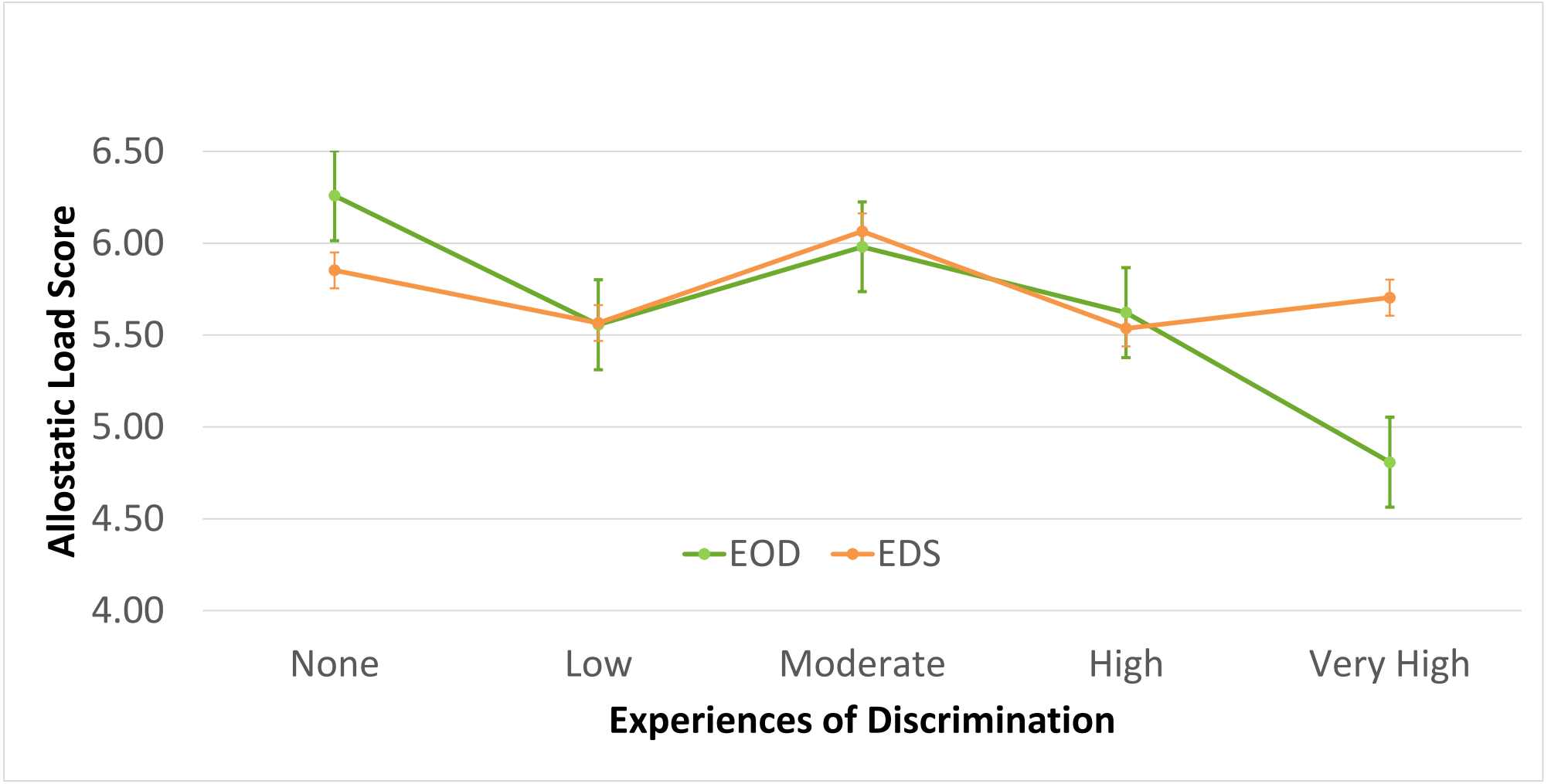
- In your day-to-day life, how often have any of the following things happened to you because of your race, ethnicity, or color?
  - You are treated with less courtesy than other people.
  - You are treated with less respect than other people.
  - You receive poorer service than other people at restaurants or stores.
  - People act as if they think you are not smart.
  - People act as if they are afraid of you.
  - People act as if you are dishonest.
  - People act as if they're better than you are.
  - You are called names or insulted.
  - You are threatened or harassed.
  - You are followed around in stores.

Williams, DR

Sample distribution: EDS



Regression of EOD vs. EDS on AL



Note: Very High=reference

AL regresses on EOD and EDS

Variable	EOD		EDS	
Discrimination Category	β	95% CI	β	95% CI
None	**1.451	(0.197, 2.706)	0.149	(-0.979, 1.278)
Low	0.749	(-0.282, 1.780)	-0.138	(-1.243, 0.966)
Moderate	**1.173	(0.135, 2.212)	0.361	(-0.830, 1.553)
High	0.815	(-0.388, 2.018)	-0.167	(-1.465, 1.130)
Age	***0.072	(0.021, 0.124)	**0.067	(0.016, 0.120)
Taking CV Medication	***1.009	(0.277, 1.742)	***1.043	(0.303, 1.784)
Taking DM Medication	***1.771	(0.519, 3.024)	***1.808	(0.529, 3.089)
≤ High School Diploma	***1.079	(0.428, 1.731)	***1.117	(0.458, 1.777)
Not Employed	-0.314	(-0.966, 0.338)	-0.349	(-1.000, 0.301)
No Health Insurance	-0.022	(-0.720, 0.675)	-0.104	(-0.801, 0.592)
Not Married/Partnered	0.077	(-0.575, 0.730)	0.126	(-0.537, 0.790)
≤ 100% FPL	0.474	(-0.268, 1.217)	0.408	(-0.335, 1.151)

*Note: One observation was deleted due to outlierness; *p < 0.10, **p < 0.05, ***p < 0.01; Referent group: Very High*

Discrimination, Racial Bias, and Telomere Length in African American Men

DH Chae, A Nuru-Jeter, NE Adler, GH Brody, J Lin, EH Blackburn, ES Epel. *Am J Prev Med.* 2014;46(2): 103-111.

Table 2. Linear regressions predicting leukocyte telomere length in kilobase pairs among African-American men, b (SE)

	Model 1	Model 2	Model 3
Intercept	5.68 (0.09)***	6.20 (0.30)***	6.57 (0.53)***
Racial discrimination	−0.03 (0.02)	−0.01 (0.01)	−0.02 (0.01)
Implicit racial bias	0.51 (0.27)	0.53 (0.26)*	0.54 (0.26)*
Discrimination × bias	−0.10 (0.04)*	−0.10 (0.04)*	−0.10 (0.04)*
Age		−0.01 (0.01)*	−0.02 (0.01)*
Poverty ratio		0.06 (0.02)**	0.05 (0.02)**
Some college versus high school or less		−0.08 (0.08)	−0.08 (0.07)
Unemployed versus employed		−0.09 (0.08)	−0.08 (0.08)
Current versus nonsmoker			0.00 (0.08)
Health conditions			0.01 (0.02)
Medication: yes versus no			−0.22 (0.08)**
Waist–hip ratio			−0.23 (0.53)
R^2	0.08	0.27	0.33

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

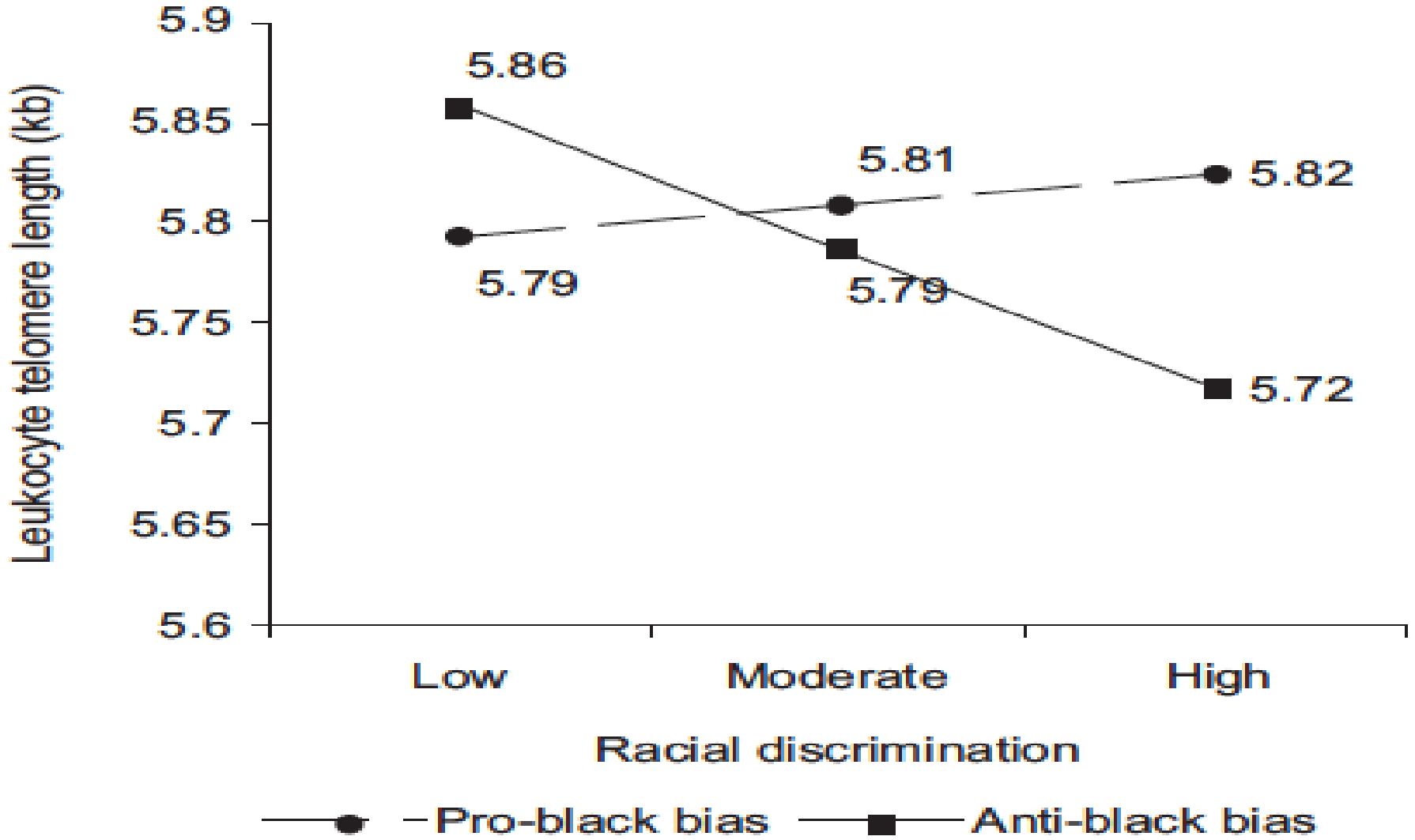


Figure 1. Predicted leukocyte telomere length by racial discrimination and implicit racial bias among African-American men

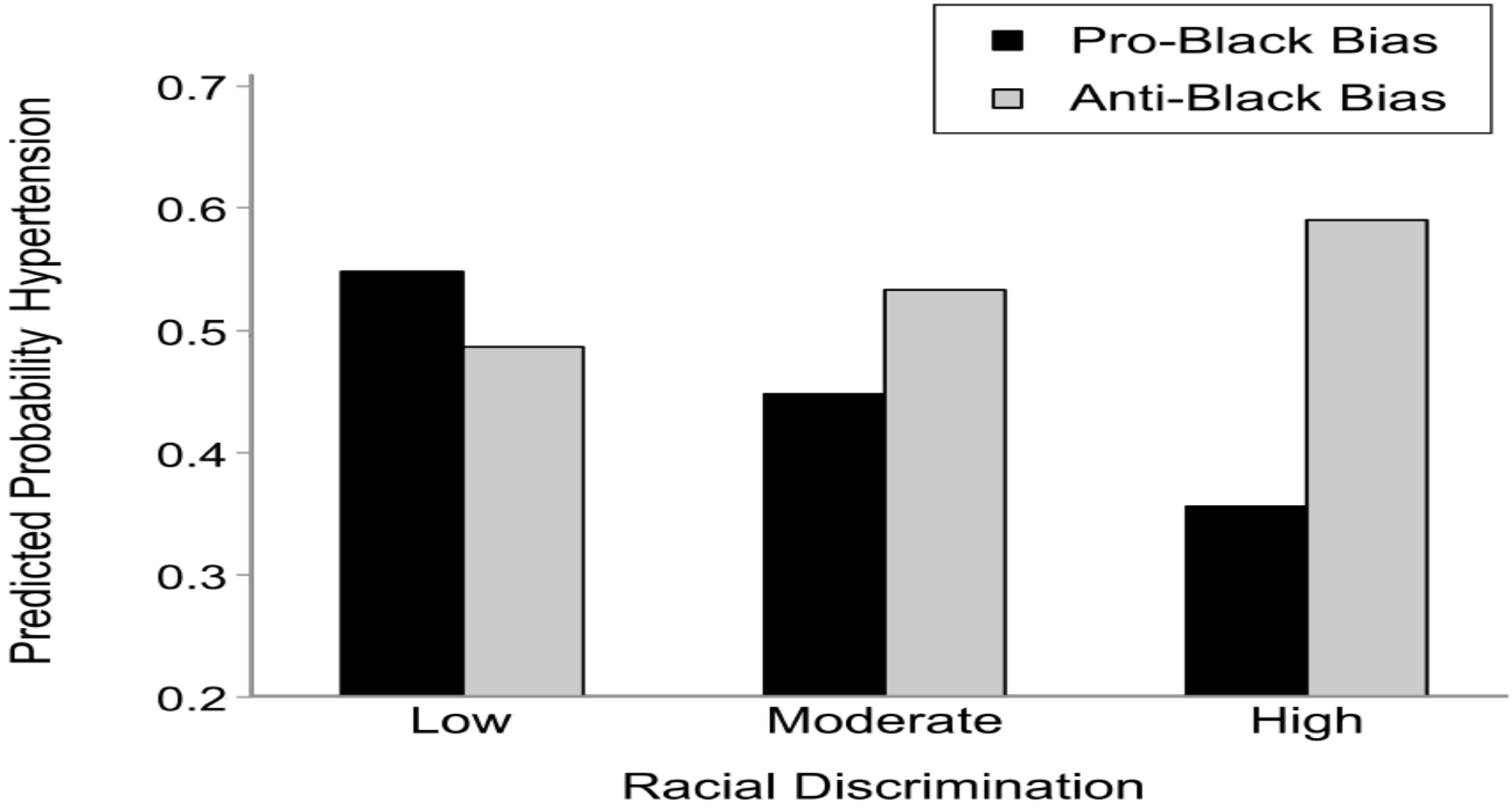


Figure 1.
Predicted probabilities of hypertension by racial discrimination and implicit racial bias among African American men in the Bay Area Heart Health Study (n = 91).
Note: Controlling for age, relationship status, poverty ratio, health insurance, waist-hip ratio, and number of chronic conditions.
Interaction between racial discrimination and implicit racial bias: $\chi^2 = 4.89$, 1 *df*, p = 0.027.

Psychosom Med. 2012 November ; 74(9): 961–964.

Association of direct and vicarious racism over the lifecourse and preterm birth

K Daniels, Z Valdez, DH Chae, AM Allen

Racism over the Lifcourse

Table 3. Intercorrelations of Miscarriage, Racism, and Control Variables

Variable	1	2	3	4	5	6	7	8	9
1. Miscarriage	1								
2. Marital Status	-.18*	1							
3. Per Capita Household Income	.10	-.10	1						
4. Insurance Status	-.03	.12	.07	1					
5. Adult Direct Racism	.16*	.01	-.03	.04	1				
6. Adult Vicarious Racism	.07	.02	-.12	-.13†	.26***	1			
7. Adolescent Direct Racism	.07	.13†	-.09	-.06	.17*	.65***	1		
8. Adolescent Vicarious Racism	.14†	.07	-.09	-.14†	.17*	.77***	.43***	1	
9. Child Direct Racism	.09	.09	.17*	-.05	.15*	.43***	.55***	.47***	1
10. Child Vicarious Racism	.05	.13†	-.11	-.05	.19*	.63***	.65***	.75***	.5(

Notes: † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Adjusted Odds Ratios for Preterm Labor by Racial Discrimination

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Adult Direct (Everyday Discrimination Scale)	1.091 (.915, 1.301)						
Adult Direct (Experiences of Discrimination Scale_		1.070 (.898, 1.276)					
Adult Vicarious			1.130 (.883, 1.446)				
Adolescent Direct				**1.477* (1.001, 2.180)**			
Adolescent Vicarious					**1.270+ (.986, 1.635)**		
Childhood Direct						1.100 (.809, 1.498)	
Childhood Vicarious							**1.453* (1.010, 2.090)**
Controls							
Number of Pregnancies	1.191* (1.011, 1.402)	1.174* (1.001, 1.375)	1.164+ (.994, 1.362)	1.176+ (1.000, 1.384)	1.167+ (.994, 1.371)	1.170+ (.998, 1.372)	1.181* (1.003, 1.391)
Marital Status	1.434 (.464, 4.428)	1.410 (.456, 4.357)	1.395 (.450, 4.324)	1.421 (.453, 4.459)	1.480 (.468, 4.681)	1.416 (.457, 4.383)	1.206 (.380, 3.830)
Income Adjusted for Household Size	1.000 (.999, 1.000)	1.000 (.999, 1.000)	1.000 (.999, 1.000)	1.000 (.999, 1.000)	1.000 (.999, 1.000)	1.000 (.999, 1.000)	1.000 (.999, 1.000)
College Educated	1.142 (.283, 4.611)	1.102 (.274, 4.432)	1.070 (.264, 4.337)	1.028 (.254, 4.158)	1.001 (.246, 4.067)	1.117 (.277, 4.500)	1.121 (.277, 4.539)

Notes: Exponentiated coefficients; 95% confidence intervals in brackets; + p<.10, * p<.05, ** p<.01, *** p<.001

Superwoman Schema: African American Women's Views on Stress, Strength, and Health

Qualitative Health Research
20(5) 668–683

DOI: 10.1177/1049732310361892
http://qhr.sagepub.com
SAGE

Cheryl L. Woods-Giscombé[1]

1. Obligation to present an image of strength
2. Obligation to suppress emotions
3. Resistance to being vulnerable
4. Intense motivation to succeed
5. Obligation to help others/multiple roles
6. Limited self-care

ISSUES IN MENTAL HEALTH NURSING
https://doi.org/10.1080/01612840.2019.1584654

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The Giscombe Superwoman Schema Questionnaire: Psychometric Properties and Associations with Mental Health and Health Behaviors in African American Women

Cheryl L. Woods-Giscombe, PhD[a], Amani M. Allen, PhD[b], Angela R. Black, PhD[c,f], Teneka C. Steed, PhD[d], Yin Li, PhD[e], and Charity Lackey[a]

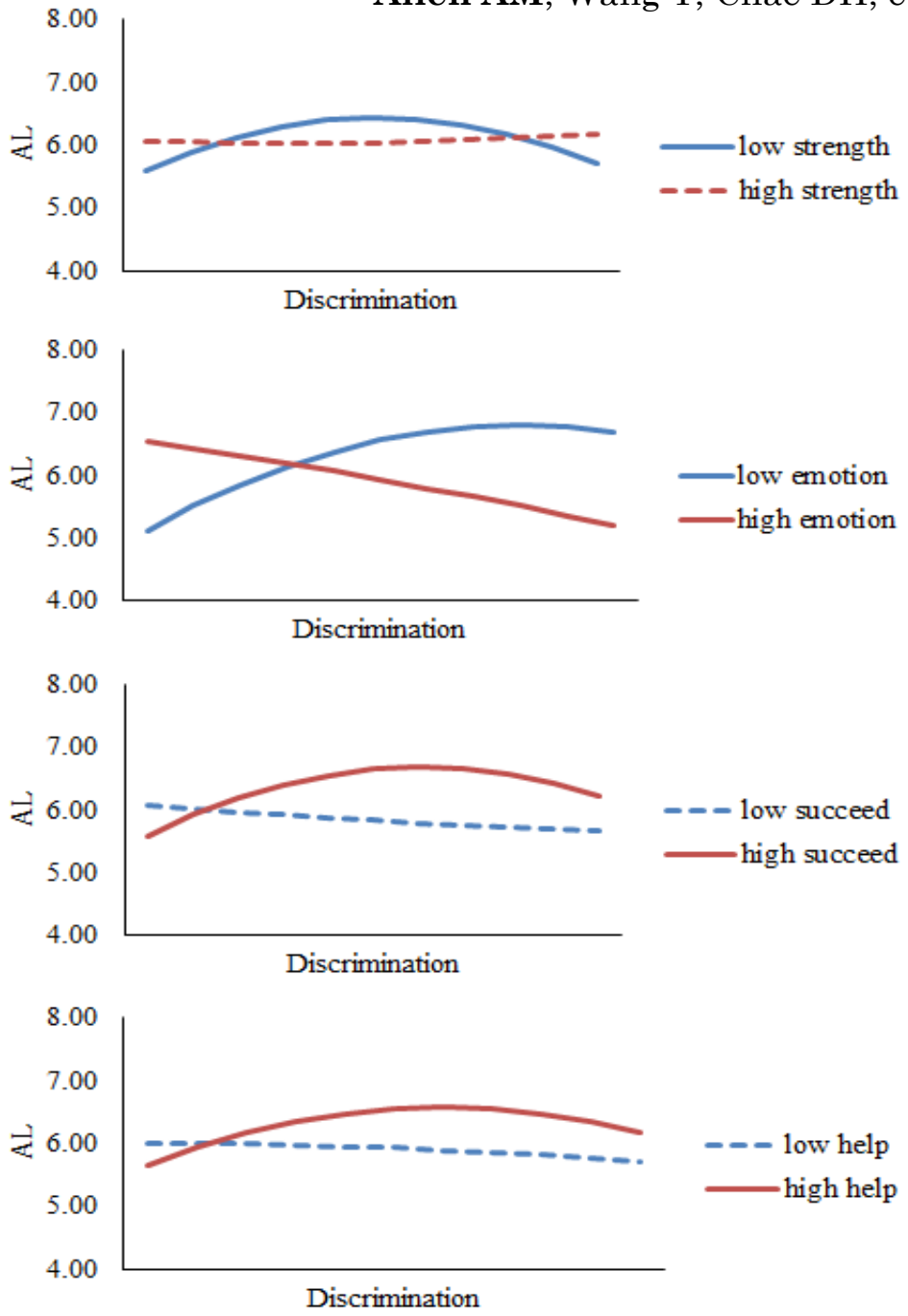
[a]School of Nursing, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA; [b]University of California, Berkeley, Berkeley, California, USA; [c]University of Wisconsin, Madison, Madison, Wisconsin, USA; [d]University of North Carolina at Greensboro, Greensboro, North Carolina, USA; [e]Emory University, Atlanta, Georgia, USA; [f]Mindfulness for the People, Milwaukee, Wisconsin, USA

ABSTRACT

The purpose of this research was to examine the psychometric properties of the Giscombe Superwoman Schema Questionnaire. Three separate studies conducted with 739 African American women provided preliminary evidence that the Questionnaire's factor structure aligns with the Superwoman Schema Conceptual Framework and has good reliability. In addition, it is positively associated with perceived stress, depressive symptoms, using food to cope with stress, poor sleep quality, and physical inactivity. This study provides preliminary evidence to suggest that the Giscombe Superwoman Schema Questionnaire is psychometrically sound; Superwoman Schema is associated with health behaviors and psychological states that may increase risk for illness.

On the front cover: The cover image, submitted by Allen *et al*., is from the original article "Racial discrimination, the superwoman schema, and allostatic load: exploring an integrative stress-coping model among African American women," https://doi.org/10.1111/nyas.14188.

Allen AM, Wang Y, Chae DH, et al. *Ann NY Acad Sci*.




Do You Experience Stress?
African American Women's
Heart & Health Study
Are you an
African American woman
30-50 years of age?
You may be eligible to
participate in a study about
stress and heart health.
•Free blood pressure check
• Free Health Screening

AMERICAN JOURNAL OF EPIDEMIOLOGY

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THE CONTRIBUTION OF THE SOCIAL ENVIRONMENT TO HOST RESISTANCE[1]

THE FOURTH WADE HAMPTON FROST LECTURE

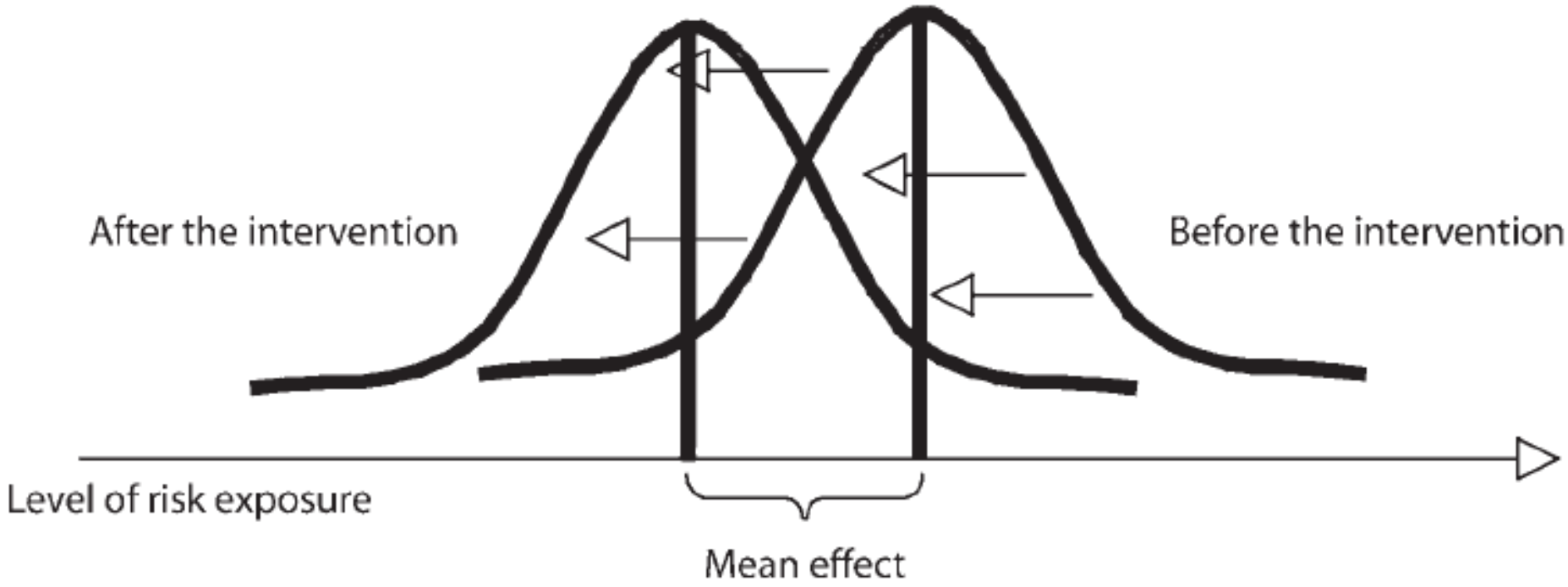
JOHN CASSEL[2]

"throughout all history, disease...not been prevented by finding and treating sick individuals, but by modifying those environmental factors facilitating its occurrence,..."

I count myself honored indeed to be included among those who have been chosen to present this, the Wade Hampton Frost Lecture. Unlike my [illegible] this series [illegible] one unique experience, however; I read his collected papers when practicing in South Africa before I had ever heard of the word epidemiology, much less knew what it meant. In a real sense, then, those papers were my introduction to the whole field, and for this I must thank my very wise chief, Dr. Sidney L. Kark, who introduced me to the papers, particularly

think distinguishes creative epid[illegible] studies from st[illegible] [illegible], what guides us in [illegible]loping these chains of inference? Unquestionably, in large part the answer is the model of disease causation which we (implicitly or explicitly) espouse. In Frost's day this model, stated in its most general form, was that disease occurred as a result of new exposure to a pathogenic agent. It was recognized, of course, that the consequences of such exposure would be determined both by the pathogenicity of the agent and the degree of resistance or sus-

Typical Population Health Approach

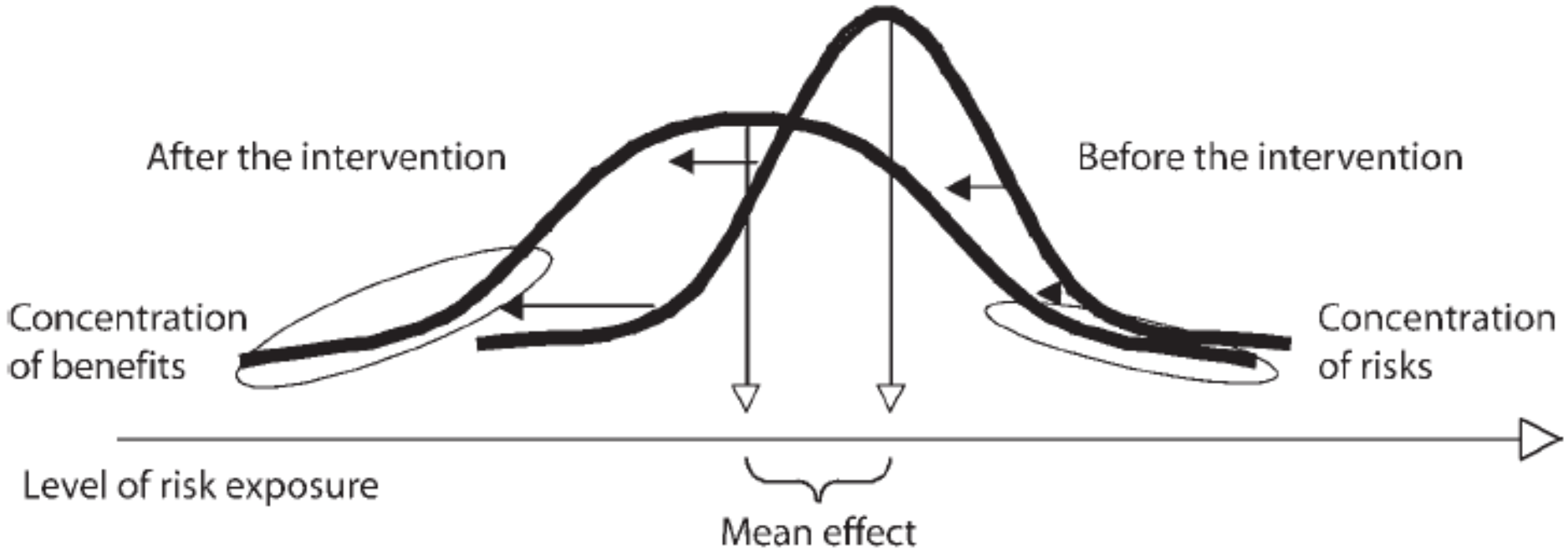


Note. Arrows indicate where the lines of the distribution would be after a population-level approach.

FIGURE 1—Hypothetical homogenous effect of a population-approach intervention on the distribution of risk in a population.

Frohlich and Potvin. *Am J Public Health*. 2008 Feb;98(2):216-21.

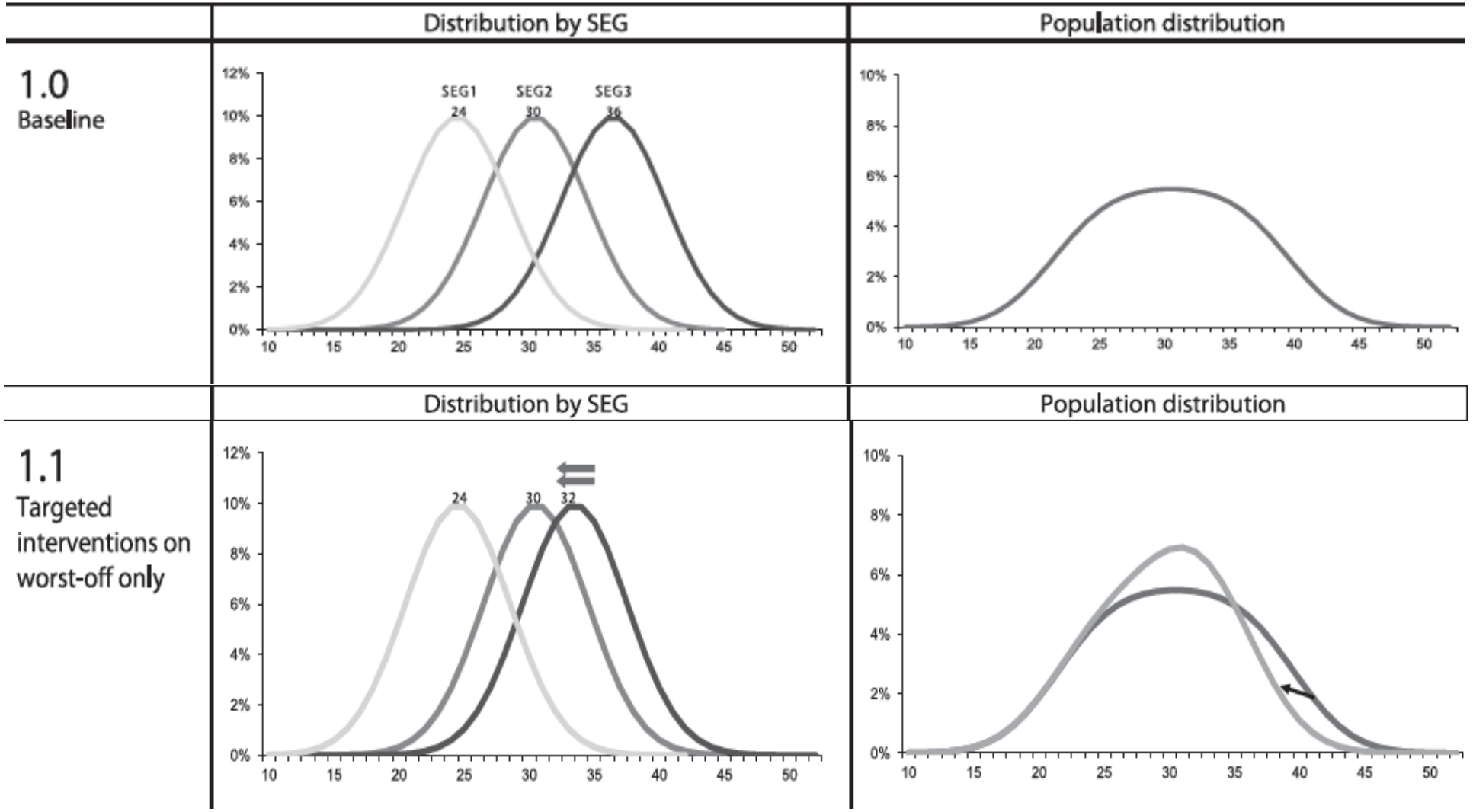
Differential Intervention Effect



Source. Adapted from Rose.[6(p74)]
Note. Arrows depict the shifting of the curve after a population-level approach. Circles indcate where the variation in risk is most flagrant.

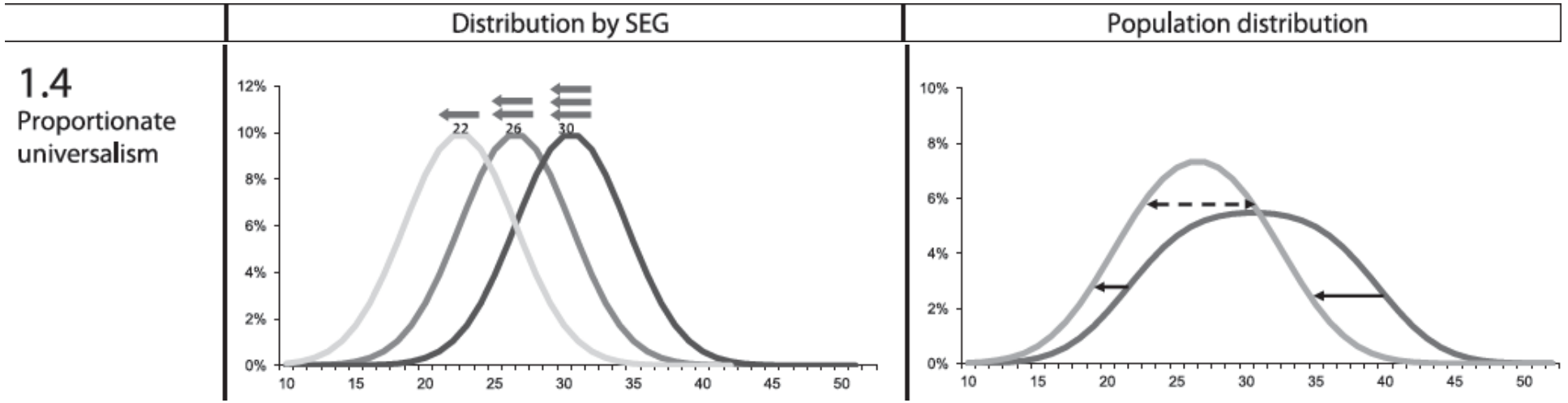
FIGURE 2—Illustration of a potential increase in the variation of risk following a population-approach intervention.

Population's-at-Risk



Intake of saturated fatty acids by socioeconomic group (SEG): higher to lower SEG →

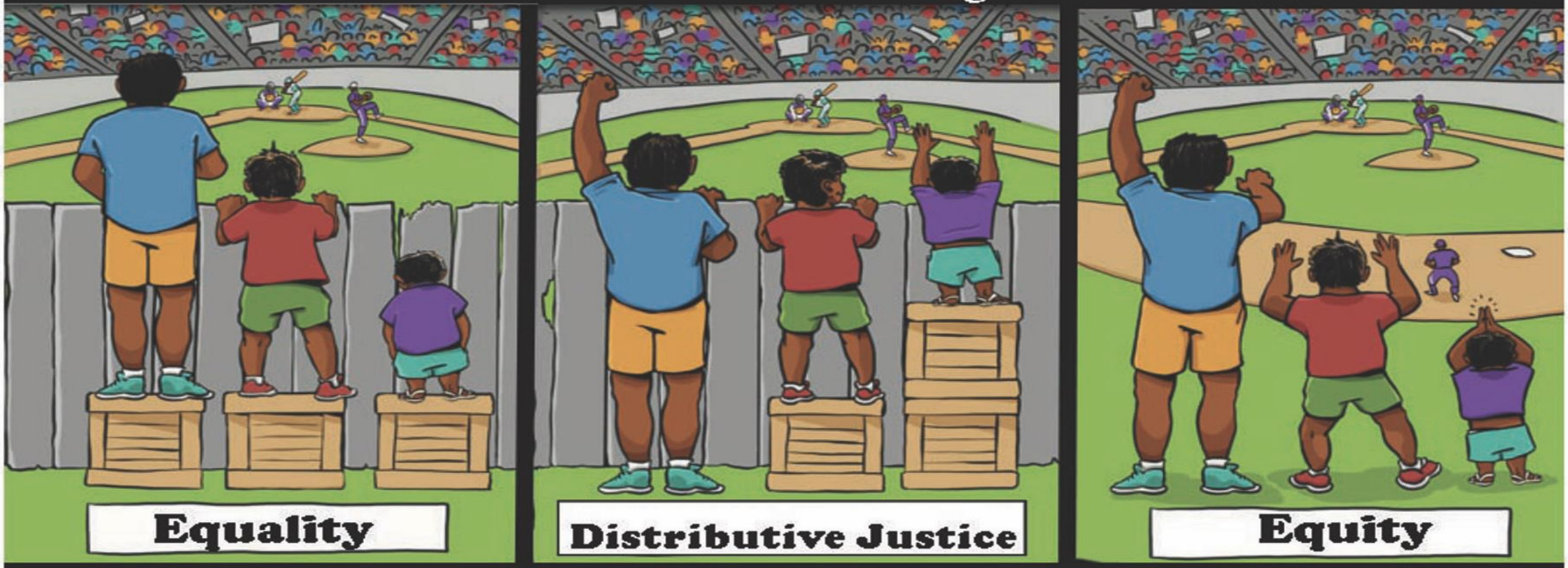
Fundamental Causes



Intake of saturated fatty acids by socioeconomic group (SEG): higher to lower SEG →

Benach J, Malmusi D, Yasui Y, Martinez JM, Muntaner C. *Int J Health Serv*. 2011;41(1):1-9.

BUILDING BLOCKS
and tearing down fences



CREATING INTEGRATED & EQUITABLE SYSTEMS OF CARE IN RURAL COMMUNITIES

Equity = the quality of being fair or impartial