

# IS SELF-REPORTED WEIGHT AND RACIAL DISCRIMINATION ASSOCIATED WITH BMI AND OBESITY?

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An analysis of self-reported racism and BMI

# Purpose of Study



- Research Questions:
  - ▣ Is self-reported weight and racial discrimination associated with BMI and obesity among a national sample of Asian Americans?
  - ▣ Among immigrants, does this relationship vary by years in the U.S.?

# Background



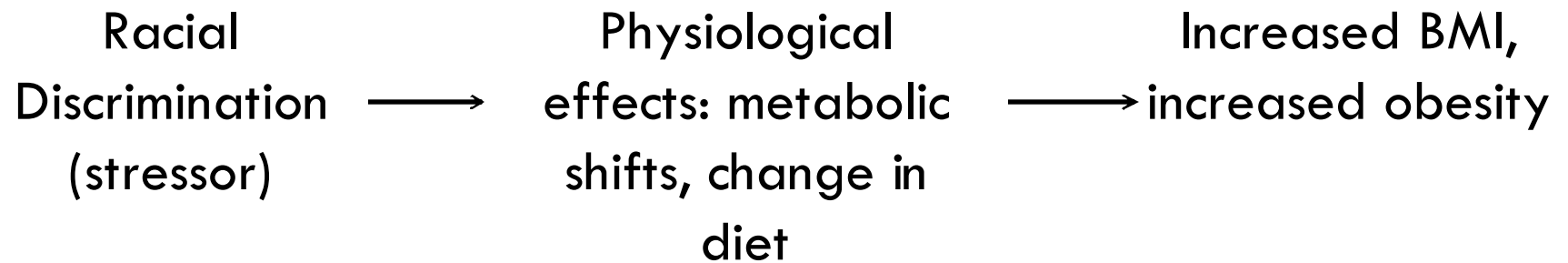
- Stressors negatively affect health
  - Cortisol release increases fat retention in the abdominal area (Rosmond et al, 1998; Marneimi et al, 2002)
  - May increase intake of high-calorie, fatty foods (Dallman et al, 2003; Dallman et al, 2005)
- Racial discrimination is a chronic stressor

# Related Research



- Stress due to disadvantaged social status may be related to obesity
  - British civil servants (Rosmond et al., 1998)
  - Bullying or emotional abuse (Gunstad et al., 2006)
  
- Discrimination may be associated with weight gain
  - Afro-Caribbean women (Tull et al., 1999)
  - Caribbean adolescents (Chambers et al., 2004)

# Conceptual Diagram

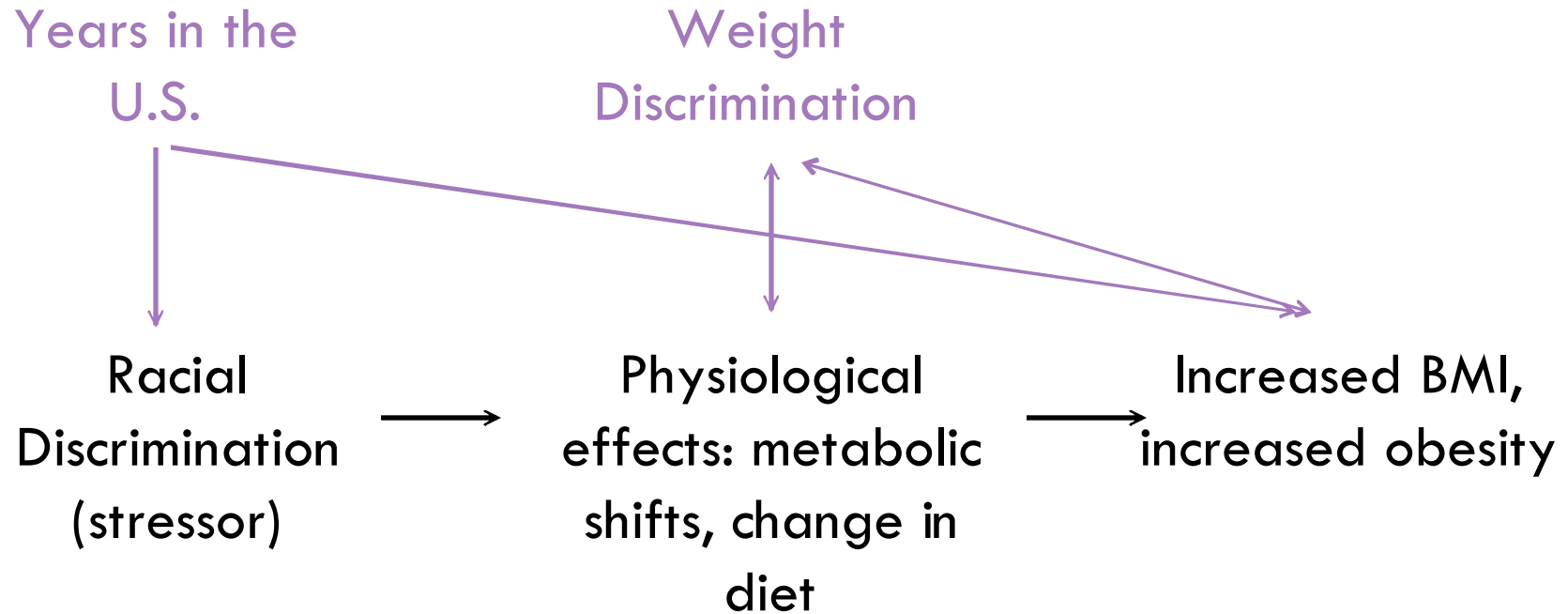


# Caveats



- Potential confounding with weight discrimination
- Potential interactive effect: discrimination\*years in the U.S.

# Conceptual Diagram



Is self-reported weight and racial discrimination associated with BMI and obesity among a national sample of Asian Americans?

Among immigrants, does this relationship vary by years in the U.S.?

# Data



- National Latino and Asian American Study (NLAAS)
  - Nationally representative psychiatric epidemiological study of Asians and Latinos.
  - Variables include: social position, environmental context, psychosocial factors, acculturation, psychiatric illness, mental health service use



# Variables

Dependent Variables	Measurement
BMI (Continuous)	$\text{Weight (lbs)}/\text{Height (in.)}^2 \times 703.49$
BMI Categories	<ol style="list-style-type: none"><li>1. Underweight/normal = 18.5-24.9</li><li>2. Overweight = 25-29.9</li><li>3. Obese = over 30</li></ol>

# Variables

Independent Variables	Measurement
Reasons for discrimination (Categorical)	<ol style="list-style-type: none"><li>1. Race (nationality, ethnicity and skin color)</li><li>2. Weight</li><li>3. Other (height, gender age, sexual orientation, income, education)</li><li>4. None (no report of discrimination)</li></ol> <p>Adapted from Jackson &amp; Williams, 1995</p>
Covariates	
Mental disorders, self-rated physical health, social desirability, employment, immigration generation, duration in U.S., age, gender, per capita household income	

# Analysis

	Dependent	Independent	Interaction	Covariates
I: Linear Regression	BMI	Self-reported discrim.		Included
II: Multinomial Logistic Regression	BMI categories	Self-reported discrim.		Included
III: Linear Regression w interaction terms	BMI	Self-reported discrim.	Discrim. * years in the U.S.	Included

# Study Population

## Variables of Interest

Study Population (n=1956), weighted	
BMI, mean	24.2 (.2)
Weight category	
Underweight/normal	64.9%
Overweight	26.9%
Obese	9.3%
Discrimination	
None	25.4%
Racial	41.7%
Weight	0.8%
Other	32.1%

# Study Population

## Immigration and Ethnicity Related Characteristics

Characteristics of study Population, weighted	
Immigration	
Born outside US	76.94%
Born US and parents born abroad	13.68%
Respondent and parents born in US	9.38%
Ethnicities	
Vietnamese	12.93%
Filipino	21.59%
Chinese	28.69%
Other API	36.79%

# Bivariate Analysis Results

Discrimination	Normal/ Underweight (%)	Overweight (%)	Obese (%)	BMI (SE)
None	70.08	25	4.93	23.48 (.30)
Racial	60.81	28.89	10.29	24.44 (.17)
Weight	24.61	27.86	47.56	31.24 (1.78)
Other	64.63	24.90	10.47	24.34 (.26)

# Bivariate Analysis Results

Discrimination	Overweight (%)	Obese (%)
None	25	4.93
Racial	28.89	10.29
Weight	27.86	47.56
Other	24.90	10.47

# Multivariate Analysis Results

## BMI continuous

	Beta (SE)
Race discrimination	.68 (.34) *
Weight discrimination	.86 (.24) **
Other discrimination	.03 (.91)
No discrimination	Reference

\*  $p \geq 0.05$

\*\*  $p \geq 0.001$

Controlling for mental disorders, self-rated physical health, social desirability, employment, immigration generation, duration in U.S., age, gender, per capita household income



# Multivariate Analysis Results

## BMI categorical

	Obesity RRR (95% CI)
Race discrimination	2.12 (1.04, 4.33) *
Weight discrimination	1.52 (1.25, 1.85) **
Other discrimination	1.05 (.98, 1.12)
No discrimination	Reference

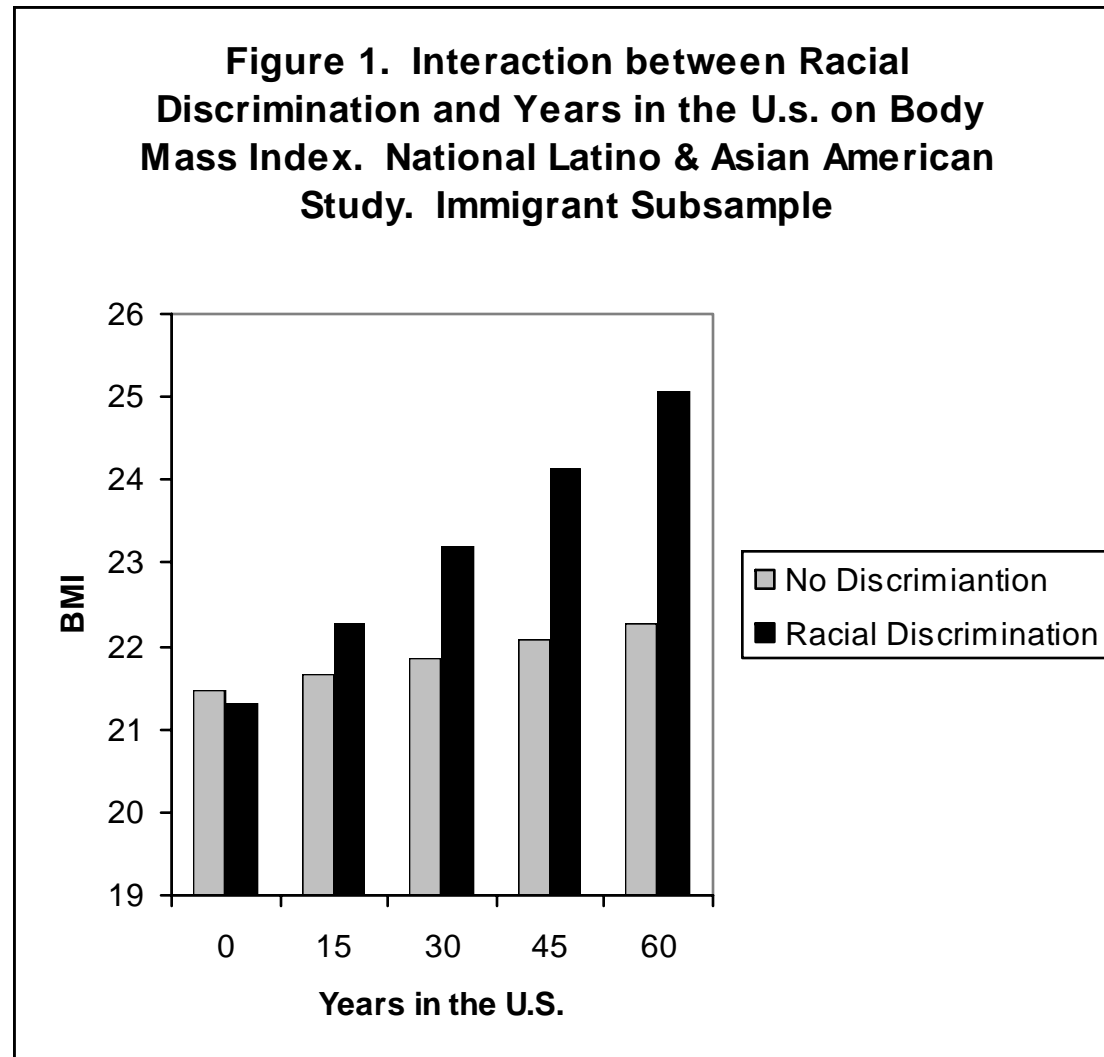
\*  $p \geq 0.05$

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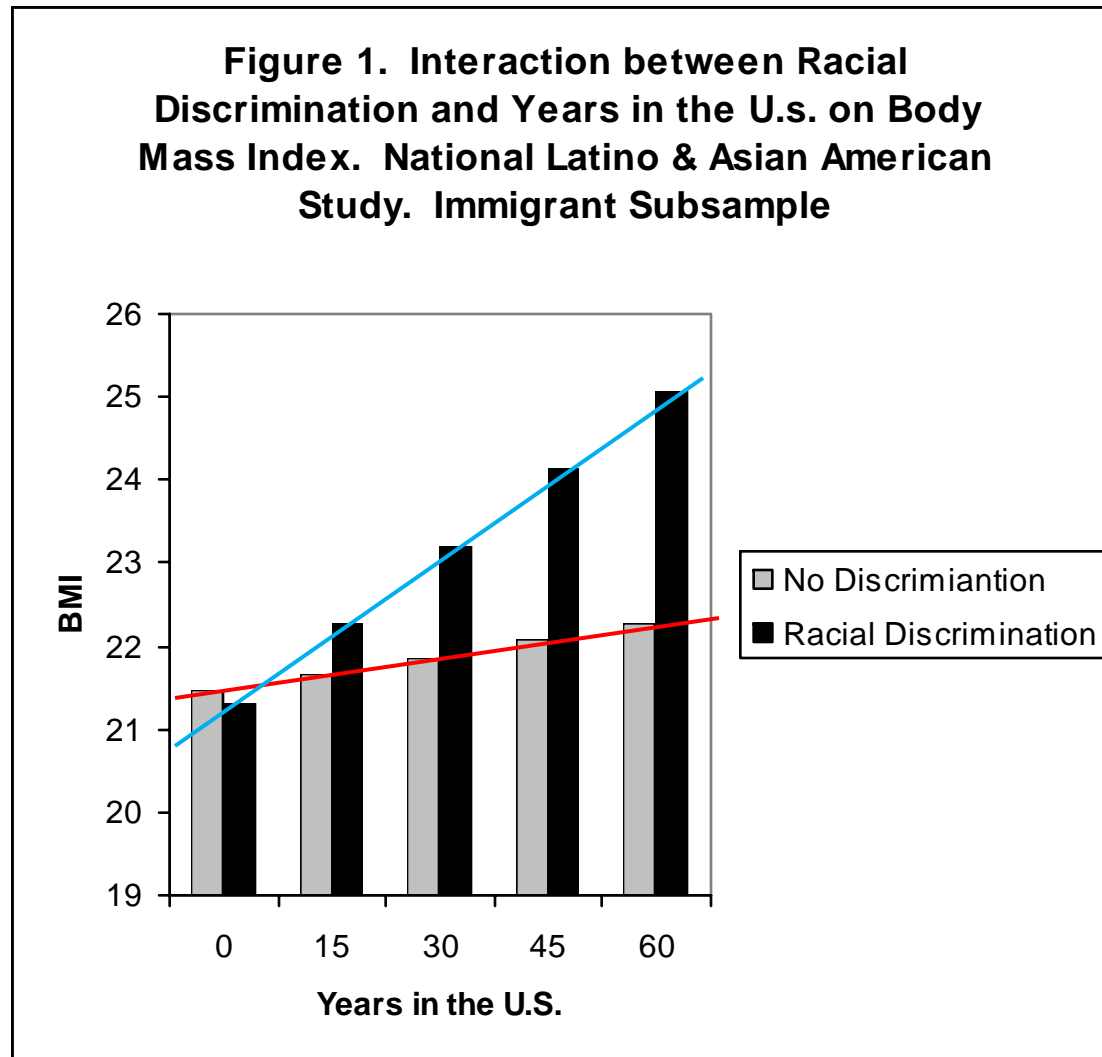
# Multivariate Analysis Results

## Interaction Terms



# Multivariate Analysis Results

## Interaction Terms



# Discussion



- Increasing BMI and the obese BMI categories were be positively correlated with increased reports of racism
- Interactive effect is an alternative explanation for the increase in BMI for immigrants the longer they are in the U.S.
- Explore physiological mechanisms and other structural influences on BMI

# Acknowledgements



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Thank You

# Study Population

## Health Related Characteristics

Characteristics of study Population, weighted	
Mental Disorder (12-Month DSM-IV)	9.5%
Self-Rated Physical Health	3.5 (0.04)
Social Desirability	2.2 (0.1)

# Study Population

## SES and demographic characteristics

Characteristics of study Population, weighted	
Percent Married	65.39%
Employed	64.1%
Per capita income	39,3000 (1,600)
Mean Age	41.32 years
Percent Female	52.55%
Region	
West	67.1%
Northeast	16.1%
South	7.8%
Midwest	9.0%