

# Disparities in Adolescent Health

Task Force on Adolescent Health  
3 April 2009

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## Charge

- We have talked about disparities throughout the last 11 months, but postponed discussion until the cross-cutting sessions
- Today's goals:
  - Summarize key issues
  - Identify potential recommendations

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## “Disparities”

- “Disparity” typically applies to racial/ethnic gaps in access/outcomes/quality/etc.
- Sometimes “disparity” refers to unadjusted gaps<sup>1</sup>; sometimes refers to adjusted gaps<sup>2</sup>
- Group with poorer outcomes may vary
  - e.g. Smoking, substance use (African-Americans lower) vs. STI, obesity (African-Americans higher)
  - And may differ within particular issue
    - Carrying weapon (in middle school, Whites most likely)
    - Bullied (in high school, Hispanic/Latino most likely)
    - Homicide (African-Americans highest risk)

<sup>1</sup> United States Department of Health and Human Services, *Healthy People 2010: Understanding and Improving Health* (November 2000)

<sup>2</sup> Institute of Medicine's *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* (pages 3-4; © 2003)

## Healthy People 2010 Goal #2

- “Eliminate health disparities that occur by
  - race and ethnicity,
  - gender,
  - education,
  - income,
  - geographic location,
  - disability status, or
  - sexual orientation.”

## Other disparities we discussed

- Youth with special healthcare needs
- Language

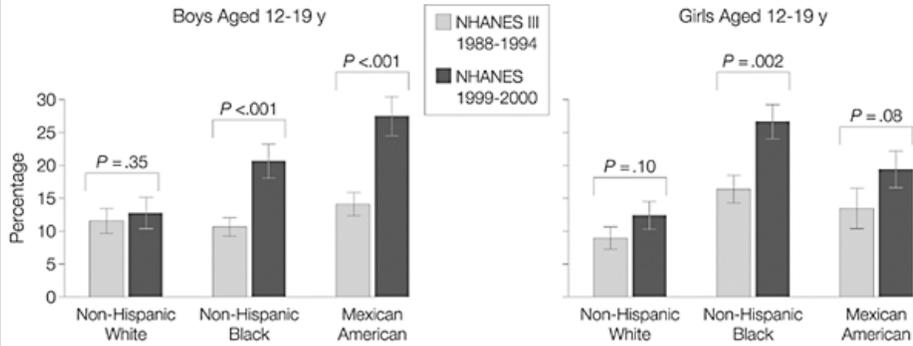
*Focus today mostly on race/ethnicity*

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## Some disparities we have covered

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### Overweight Prevalence by Race/Ethnicity for Adolescent Boys and Girls



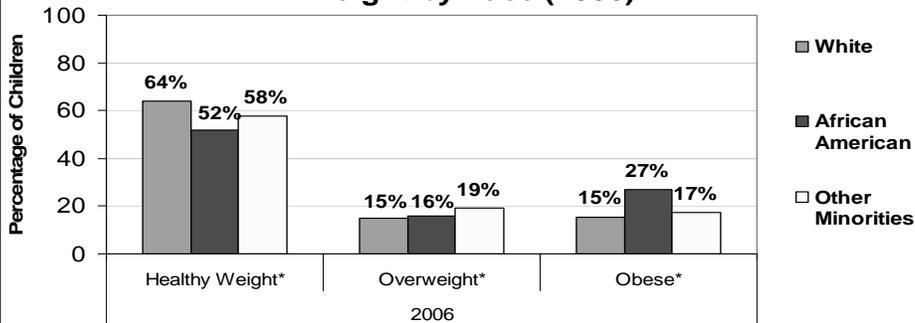
Source: Holmes M. Chronic illness. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; September 5, 2008; Morrisville, NC.

Ogden, C. L. et al. JAMA 2002;288:1728-1732.

JAMA

### N.C. Children and Youth by Race

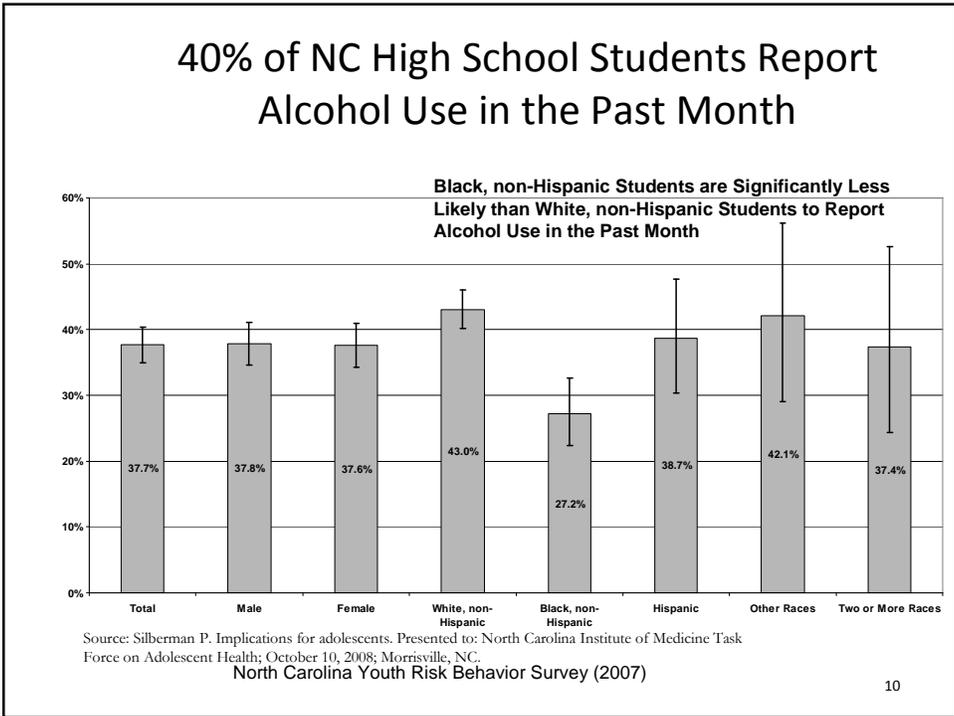
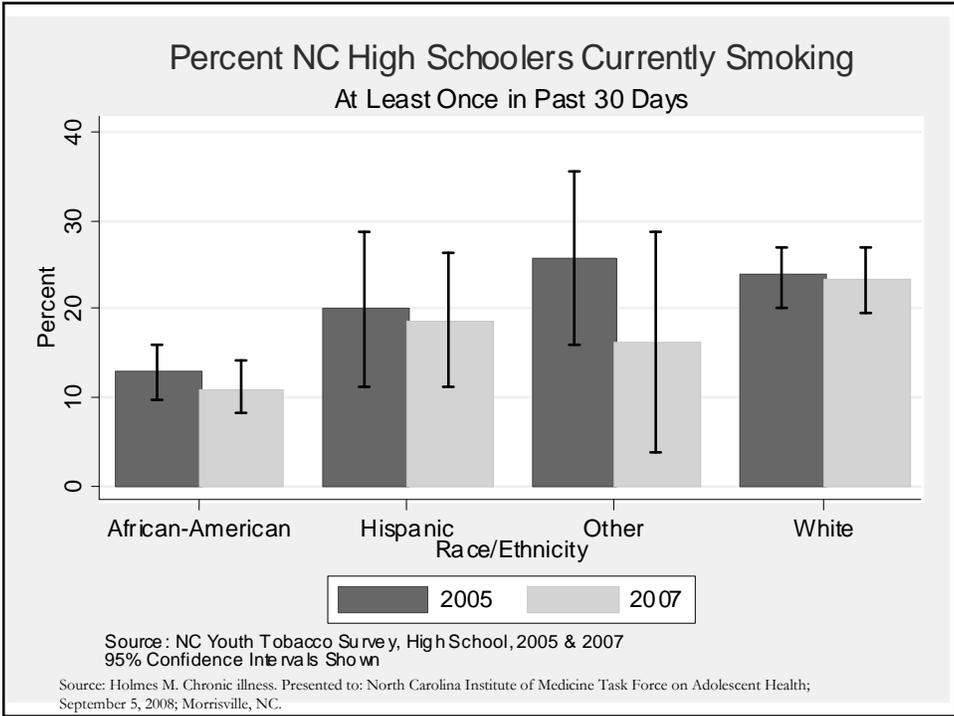
#### Percentage of NC Children and Youth, Age 10-17, who are Overweight, Obese, or at a Healthy Weight by Race (2006)



\*BMI categories calculated according to parent-reported height and weight.

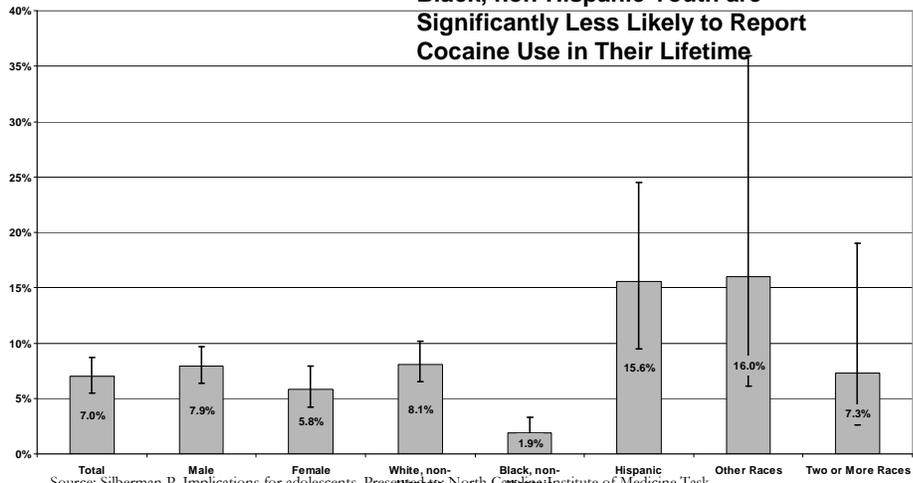
Source: North Carolina Child Health Assessment and Monitoring Program Data, North Carolina Center for Health Statistics. (2006).

Source: Ammerman A. Obesity, nutrition and physical activity. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health, September 5, 2008; Morrisville, NC.



## 1-in-14 NC High School Students Has Used Cocaine in Their Lifetime

**Black, non-Hispanic Youth are Significantly Less Likely to Report Cocaine Use in Their Lifetime**

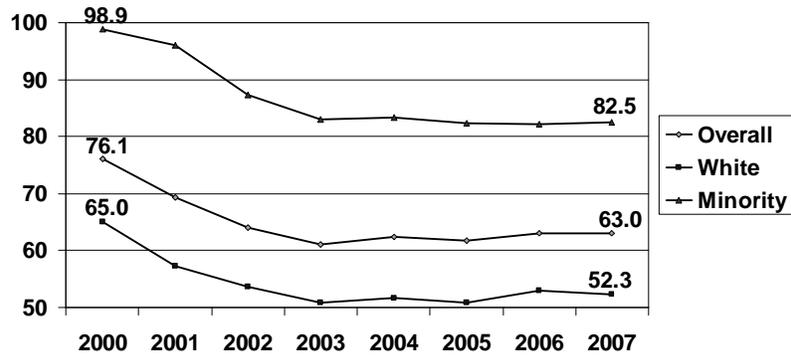


Source: Silberman P. Implications for adolescents. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; October 10, 2008; Morrisville, NC.

Youth Risk Behavior Survey (2007)

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## Comparing NC Pregnancy Rates by Race among Females Aged 15-19



Source: Engel J. Adolescent sexual health behaviors and outcomes. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; January 9, 2009; Morrisville, NC.

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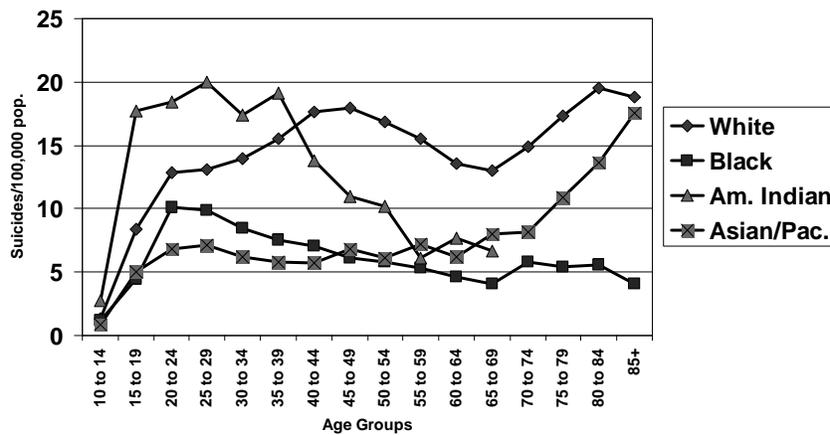
## Prevalence of “Any STI” by Race/Ethnicity

Race/ethnicity	Prevalence %
Non-Hispanic White	20.3
Mexican American	19.7
Non-Hispanic Black	47.7

Source: Leone P. HIV, STDs and unintended pregnancies: what are we doing in NC to address these? Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; January 9, 2009; Morrisville, NC.

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## United States Suicide Rates by Age Group and Race: 2000 - 2004



CDC WISQARS

Source: Riddle R. Suicide prevention and intervention: “saving tomorrows today.” Presented to: North Carolina Task Force on Adolescent Health; March 6, 2009; Morrisville, NC.

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## Homicide Data

Deaths for NC Residents aged 10-20 years  
2006

Homicide: by Race by Sex			
Race Group	Sex		Total
	Male	Female	
Asian	1	0	1
	1%	0%	1%
Black	52	8	60
	60%	9%	70%
American Indian	3	0.0116	4
	3%	1%	5%
Other	1	0	1
	1%	0%	1%
White	15	5	20
	17%	6%	23%
<b>Total</b>	<b>72</b>	<b>14</b>	<b>86</b>
	<b>84%</b>	<b>16%</b>	<b>100%</b>

**Note: 5% of residents reported Hispanic ethnicity**

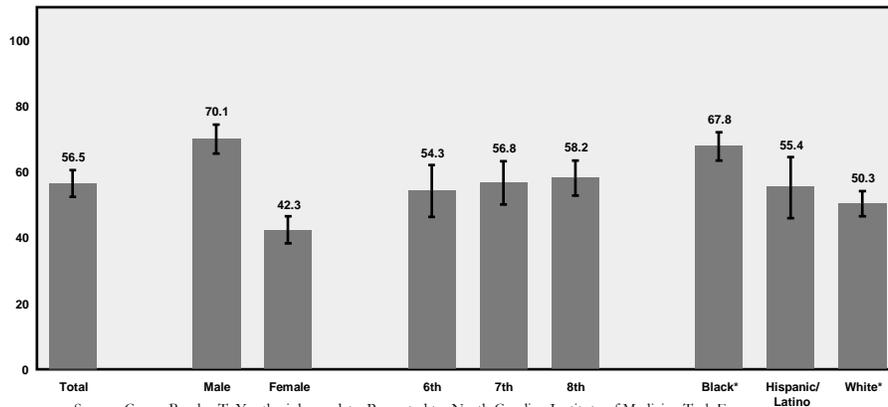
Source: Coyne-Beasley T. Youth violence data. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; February 6, 2009; Morrisville, NC.

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## 2007 Youth Risk Behavior Survey Results

### North Carolina Middle School Survey

Percentage of students who have ever been in a physical fight



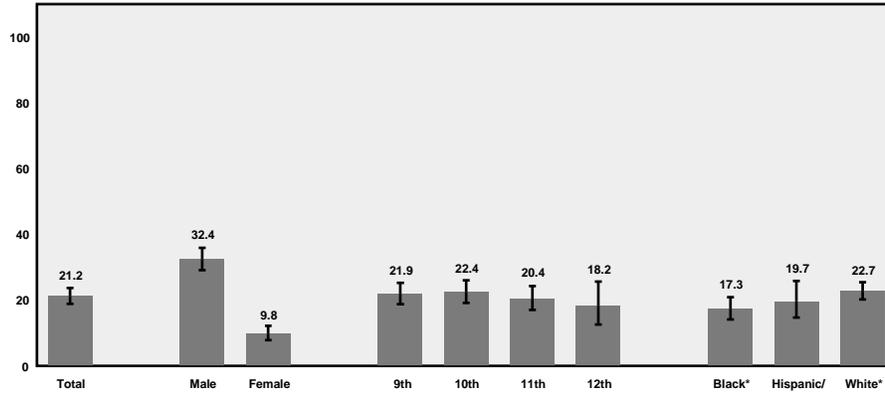
Source: Coyne-Beasley T. Youth violence data. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; February 6, 2009; Morrisville, NC.

QN11 - Weighted Data  
\*Non-Hispanic.

## 2007 Youth Risk Behavior Survey Results

### North Carolina High School Survey

Percentage of students who carried a weapon such as a gun, knife, or club on one or more of the past 30 days



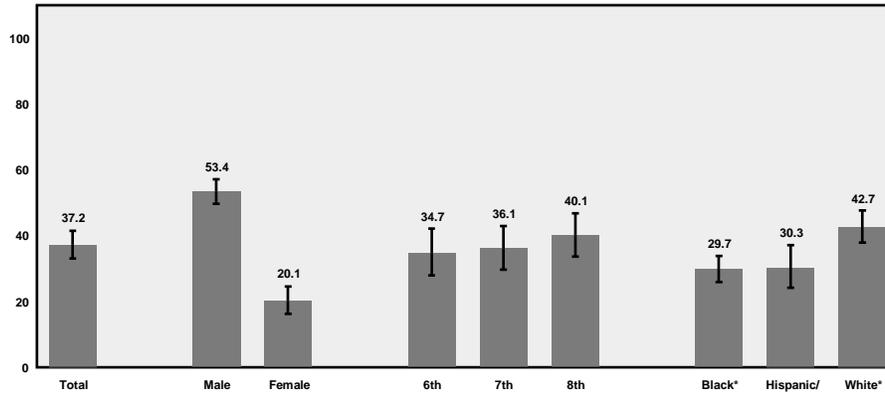
Source: Coyne-Beasley T. Youth violence data. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; February 6, 2009; Morrisville, NC.

QN12 - Weighted Data  
\*Non-Hispanic.

## 2007 Youth Risk Behavior Survey Results

### North Carolina Middle School Survey

Percentage of students who ever carried a weapon, such as a gun, knife, or club



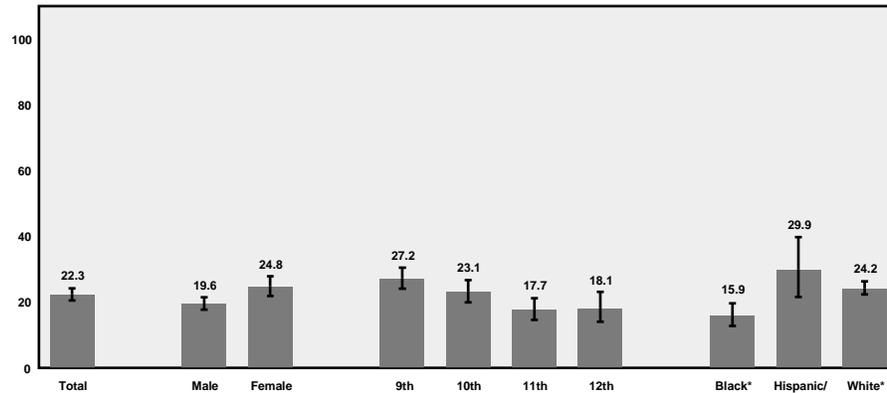
Source: Coyne-Beasley T. Youth violence data. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; February 6, 2009; Morrisville, NC.

QN10 - Weighted Data  
\*Non-Hispanic.

## 2007 Youth Risk Behavior Survey Results

### North Carolina High School Survey

Percentage of students who have been harassed or bullied on school property one or more times during the past 12 months



Source: Coyne-Beasley T. Youth violence data. Presented to: North Carolina Institute of Medicine Task Force on Adolescent Health; February 6, 2009; Morrisville, NC.

QN89 - Weighted Data  
\*Non-Hispanic.

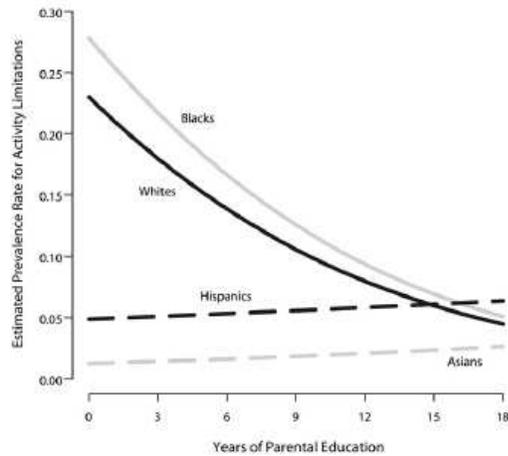
## What drives disparities?

- Role of biological aspects limited
  - E.g. Sickle cell
  - “the contribution of unavoidable biological differences to overall disparities by race/ethnicity is relatively small.” [1]
- Cultural aspects (more to come)
- Confounding by others
  - E.g. income & education accounts for more than 50% of the African-American – Caucasian gap in mortality for some causes (e.g. accidents, homicide) – but less <17% for others (e.g. hypertension) [2]

1. Adler NE and Rehkopf DH. U.S. Disparities in Health: Descriptions, Causes, and Mechanisms. Annual Review of Public Health (Apr 2008) Vol. 29: 235-252

2. Howard G, Anderson RT, Russell G, Howard VJ, Burke GL. 2000. Race, socioeconomic status, and cause-specific mortality. Ann. Epidemiol. 10:214-23

## What drives disparities?



Note. The education line was significant among White and Black children ( $P$ 's were  $< .001$ ) but not for Hispanic and Asian children.

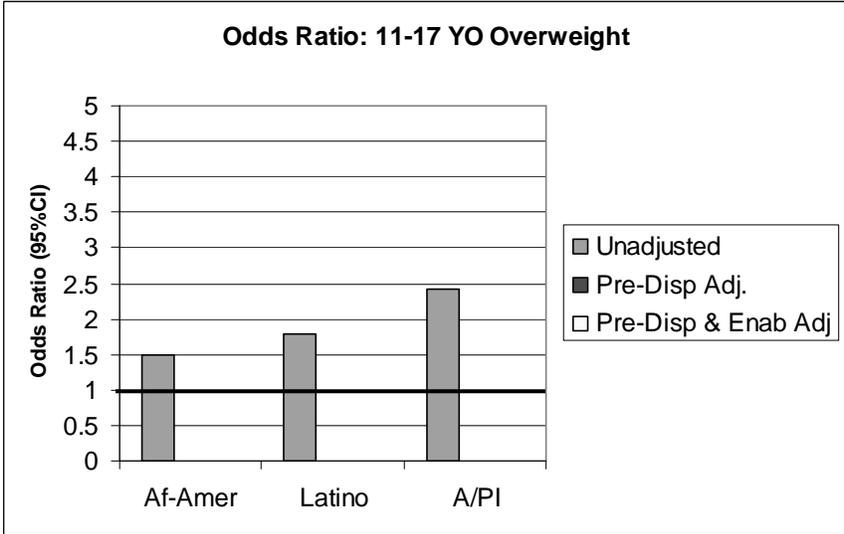
FIGURE 1—Parental education  $\times$  race interaction for activity limitations.

- Differential impacts of resources within groups
  - E.g. effect of parental education varies by race/ethnicity

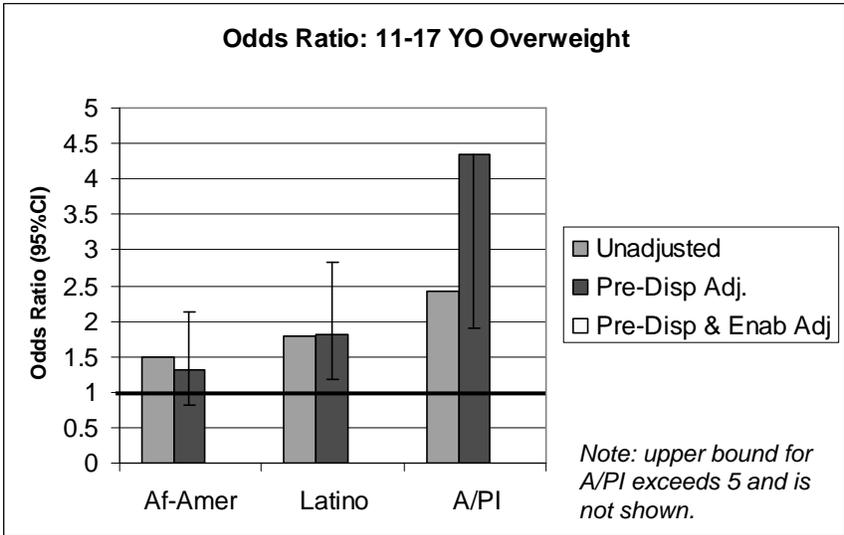
Chen et al. Understanding Health Disparities: The Role of Race and Socioeconomic Status in Children's Health. *Am J Public Health*. 2013; 103(4): 702.

## How important are confounders?

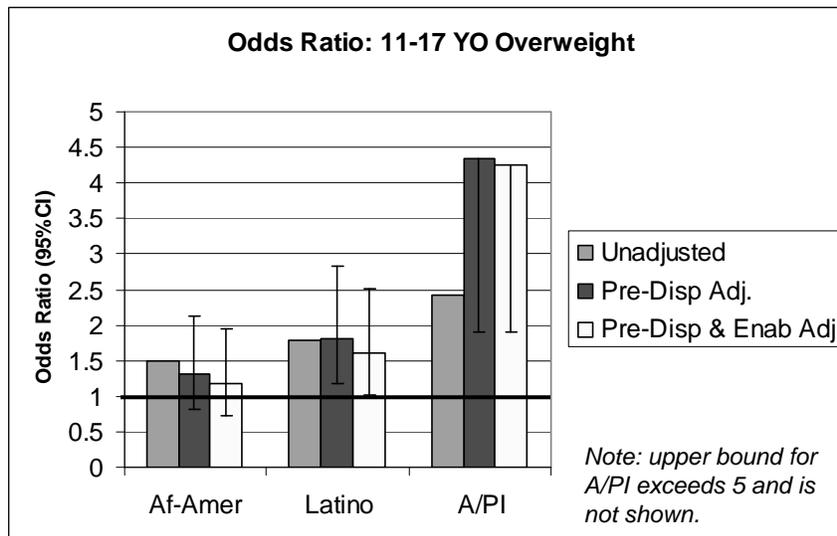
- The nexus between racial/ethnic disparities and SES is currently an area of heightened inquiry
- How important are these elements?



Haas et al. 93. The Association of Race, Socioeconomic Status, and Health Insurance Status With the Prevalence of Overweight Among Children and Adolescents. *Am J Public Health* (12): 2105. 23



Haas et al. 93. The Association of Race, Socioeconomic Status, and Health Insurance Status With the Prevalence of Overweight Among Children and Adolescents. *Am J Public Health* (12): 2105. 24



Haas et al. 93. The Association of Race, Socioeconomic Status, and Health Insurance Status With the Prevalence of Overweight Among Children and Adolescents. *Am J Public Health* (12): 2105.

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## Causes/drivers

- Adjustment for individual characteristics (age, parents' education, income) lowered the AA/White OR for adolescents by 35% and adjustment for enabling characteristics (eg health insurance) another 30%
- Culture and language may drive higher overweight in Latino adolescents [1]

1. Popkin BM, Udry JR. Adolescent obesity increases significantly in second and third generation US immigrants: the National Longitudinal Study of Adolescent Health. *J Nutr.* 1998;128:701-706.

## So confounding removes all the disparity?

- Not at all.
- E.g. systematic review of adolescent access to health care:

*“A racial and ethnic disparity in utilization of primary care is noted when studies of adolescents and all children and youth younger than 18 years are taken together. The findings were more consistent for black than for Hispanic youth. **Most studies on primary care used national data sets and carefully controlled for both family SES and health insurance status**, thus adding to the strength of the findings.”*

Elster A Jarosik J, VanGeest J, Fleming M. Racial and Ethnic Disparities in Health Care for Adolescents : A Systematic Review of the Literature Arch Pediatr Adolesc Med 27 2003;157:867-874.

## Wrapping up

- Disparities exist. Although adjustment can sometimes mitigate the disparity, they often remain.
- Group with poorer outcomes may vary by specific measure considered



## Grains of sand for recommendations (may become pearls, may cause chafing)

- Standardized race/ethnic groups –state agencies vary in their standard for reporting
  - Eases comparisons across health measures
  - But are standards driven by federal agency?
- Programs should be appropriate for all adolescents: race, ethnic, culture, income, geography, etc.
  - Often mentioned; might fit better into omnibus statement on EBP
- Fidelity to model vs. local control / ability to modify for target community
  - Guidance on balancing this tradeoff

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