

The Contribution of Providers to the Patterning of Diabetes by Race and Ethnicity

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Background

Both the National Institutes of Health (NIH) and the American Diabetes Association (ADA) state diabetes is significantly more common among minorities (e.g., African Americans and Latinos). **No reference is made to the possible importance of socioeconomic status (SES).**

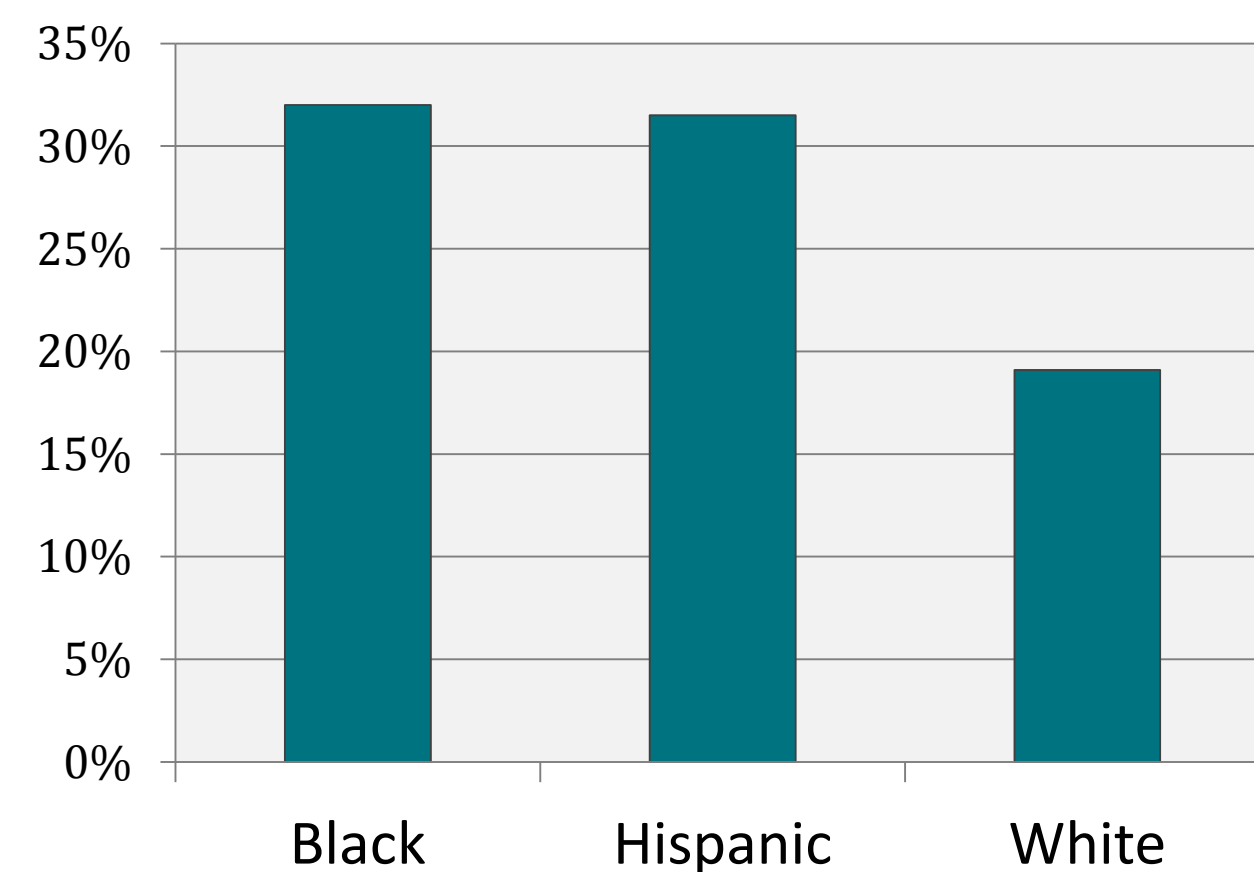
Questions Addressed

- How is type 2 diabetes socially patterned in the community?
- How do primary care doctors diagnose signs and symptoms strongly suggesting diabetes?
- What are the policy and research implications of our apparently competing epidemiologic vs. experimental results?

Findings from Community-Based Epidemiologic Survey (BACH)

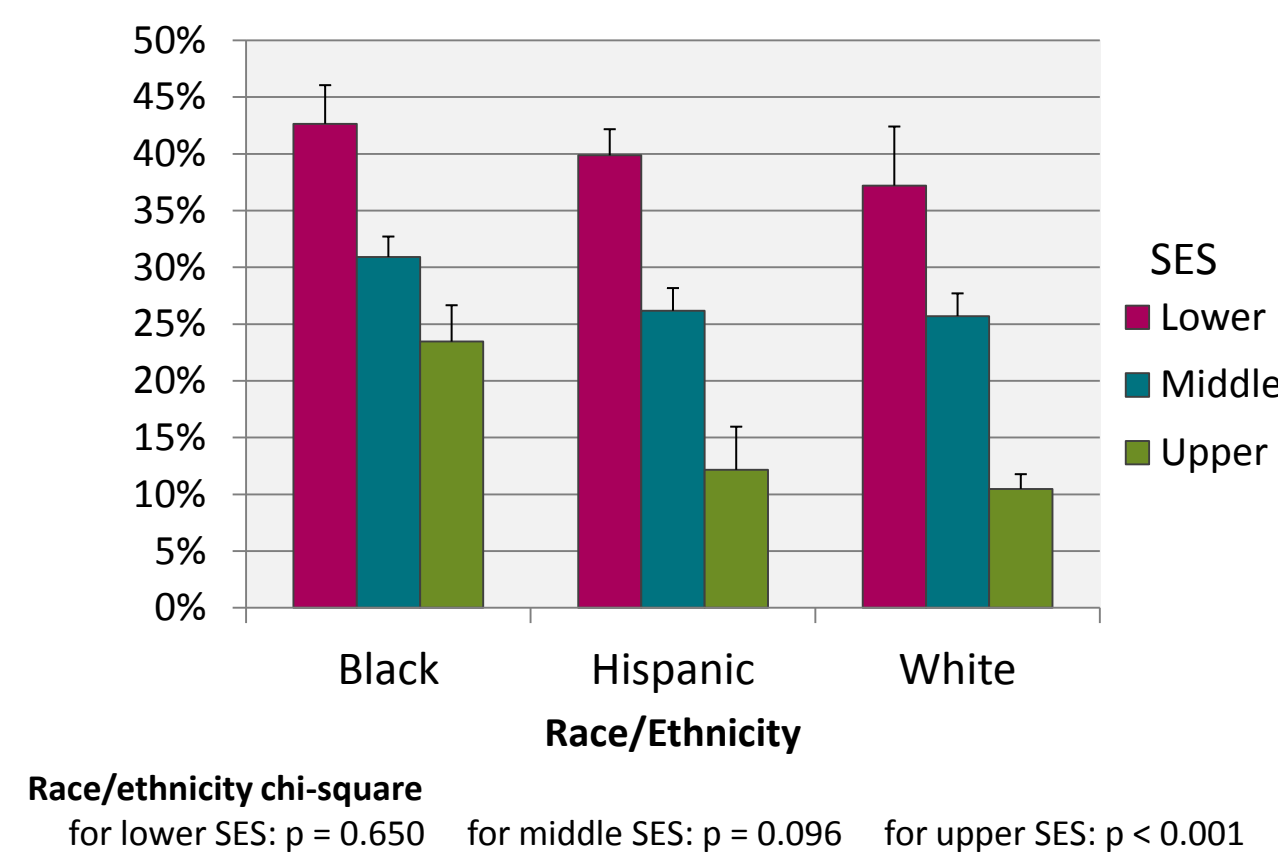
- The Boston Area Community Health (BACH) survey used a stratified, 2-stage cluster design to randomly sample 5502 adults aged 30-79 years from the city of Boston – 2301 men, 3201 women; 1767 blacks, 1876 Hispanics, and 1859 whites.
- **Figure 1** (from BACH survey) reveals the distribution of **total diabetes** (diagnosed and undiagnosed) by race/ethnicity, **unadjusted** for any other variables.

Figure 1. Both Diagnosed and Undiagnosed Diabetes by Race/Ethnicity ($p = 0.001$)



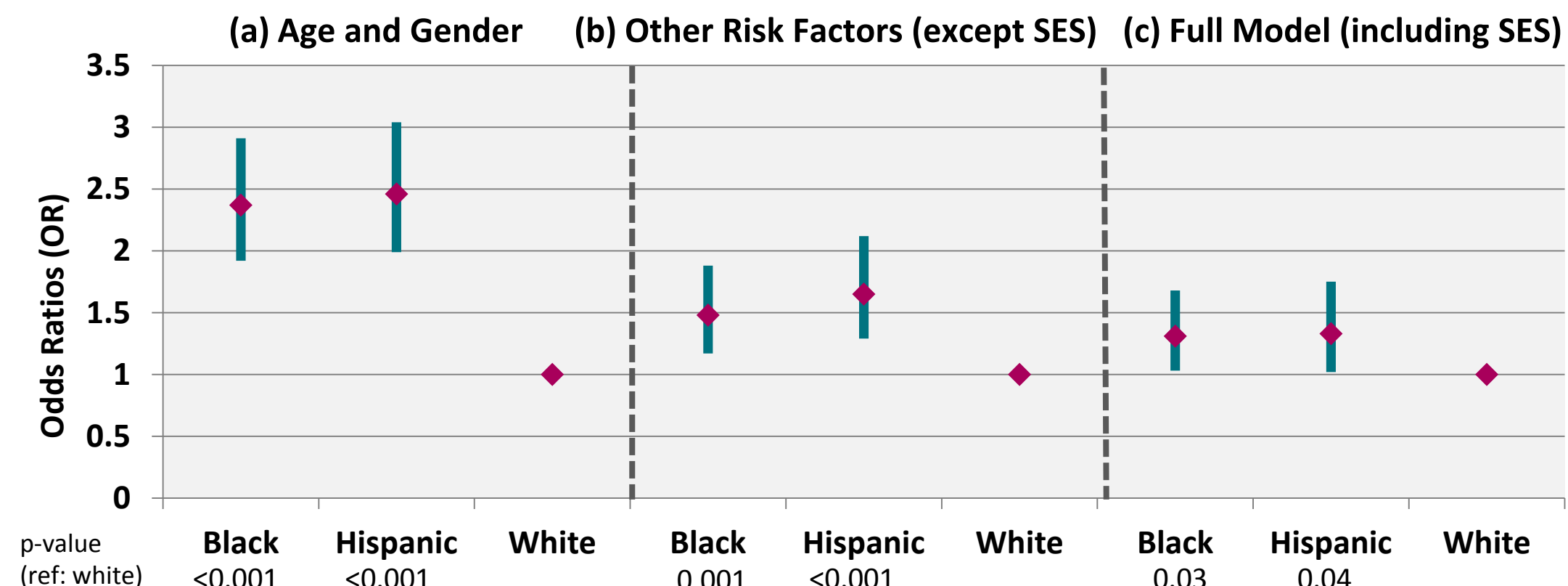
Findings continued

Figure 2. Both Diagnosed and Undiagnosed Diabetes by Race/Ethnicity AND SES



- **Figure 2** displays the distribution of total diabetes by race/ethnicity, **adding socioeconomic status (SES)**. The large difference between SES groups is evident in all three race/ethnic groups.
- A separate analysis of National Health and Nutrition Survey (NHANES) data produces a patterning by SES identical to that displayed in Figure 2 – corroborating the results from BACH.
- Results of a logistic regression analysis of BACH data are summarized in **Figure 3**.

Figure 3. Odds of Diabetes (Diagnosed and Undiagnosed) by Race/Ethnicity



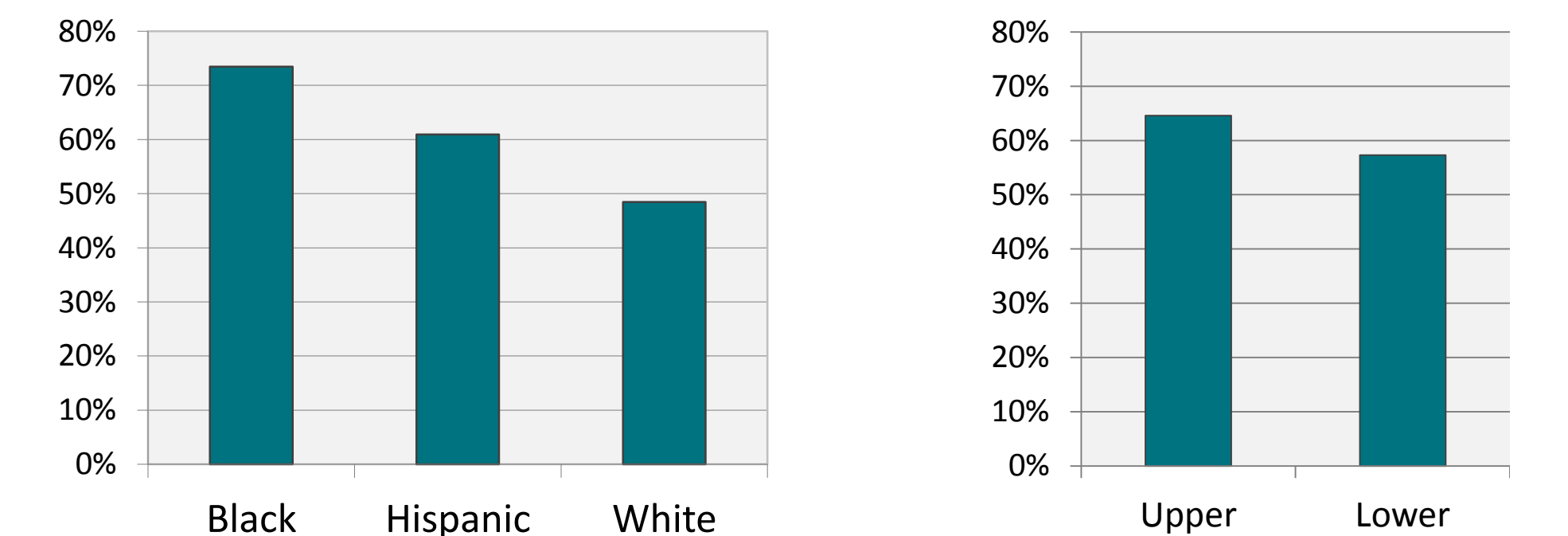
- **First panel** shows the odds ratios of diabetes by race/ethnicity, controlling only for age and gender ($p = 0.001$).
- **Second panel** depicts the odds ratios of diabetes after controlling for well-established risk factors – BMI, physical activity, hypertension, smoking, and health insurance status.
- **Third panel** adds the effect of adding SES to the odds ratios of diabetes by race/ethnicity.

Diabetes is patterned primarily by SES and not by race/ethnicity as is commonly believed.

Findings from Factorial Experiment Concerning Physician Decision Making

- In a factorial experiment, primary care physicians ($n=192$) were shown clinically authentic video vignettes of actors portraying different “patients” (age, gender, race/ethnicity: white, Hispanic, black, and SES: occupation janitor or lawyer) presenting with identical signs and symptoms strongly suggesting diabetes.
- **Figure 4** shows physicians are significantly ($p=0.009$) more likely to diagnose diabetes in black and Hispanic “patients” (controlling for the effect of age, gender, and SES). There are no differences by SES.

Figure 4. Race/ethnic and SES Differences in the Diagnosis of Diabetes
Race/Ethnic Differences ($p=0.009$) SES Differences ($p=0.265$)



Physicians diagnoses of diabetes differ significantly by race/ethnicity, and not by a patient’s (more important) SES.

Conclusions and Implications

- There are modest racial/ethnic differences in diabetes in the community.
- There are significant differences in diabetes by SES ($p > 0.001$). It is possible SES is a mediator of racial/ethnic differences.
- SES and race/ethnicity in the US are almost totally confounded (measuring one is essentially measuring the other).
- Continued patterning of diabetes by race/ethnicity motivates the search for biophysiologic and genetic/family history explanations.
- Continuing emphasis on race/ethnicity distracts researchers and policy workers from the more important and potentially modifiable contribution of SES.