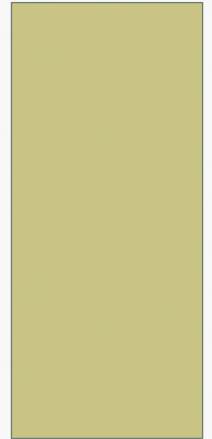


**THE RELATIONSHIP BETWEEN  
SOCIO-DEMOGRAPHIC AND  
SOCIO-ECONOMIC VARIABLES**

**AND BLOOD PRESSURE  
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# INTRODUCTION

- Is blood pressure a new danger for us?
- Is there a relationship between socio-demographic factors and blood pressure?
- Is there a relationship between socio-economic factors and blood pressure?

# LITERATURE REVIEW

- **Race, gender, age, education (Winkleby et al. 1996)**

Examination of hispanic and whites - blood pressure based on socio-demographic variables; whites had higher BP. Income not taken into account

- **Race, sex, age, income (Oakes et al. 1973)**

Awareness of elevated blood pressure based on socio-demographic variables; similar results were shown based on the race, but blacks were more aware than whites.

# LITERATURE REVIEW

- **Sex and race (Lehman et al. 2009).**

Childhood socio-economic status and family environment have strong impact on blood pressure; African American men have higher blood pressure

- **Education and Income (Jason Schnittker 2004).**

This study shows effects of socio-economic status on health outcomes. It also point out relationship between race and gender.

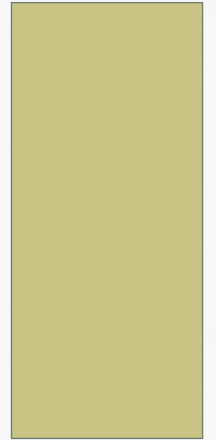
# HYPOTHESES

- **Hypothesis 1:** People who have higher education are less likely to have elevated systolic blood pressure.
- **Hypothesis 2:** People who have higher income are less likely to have elevated systolic blood pressure.

# METHODS

- 2011-2012 National Health and Nutrition Examination Survey
- Dependent variable is systolic blood pressure screening
- Independent variables are education and income
- Control variables are age, gender, marital status, and race.

# FINDINGS



# SAMPLE COMPOSITION

- **Marital Status**

  - 43.8 % single

  - 56.2 % married/cohabiting

- **Race** 74 % non-black/other, 26% non-hispanic black

- **Gender**

  - 50.7 % female

  - 49.3 % male

- **Age**-Average age of the sample 48 years old.



- **Education**

**24.0 % less than high school**

21.0 % high school/GED.

29.8 % college /AA

**25.1 % college graduate and above**

- **Income**

**26.5 % less than \$20,000**

37.0 % \$20,000-\$54,999

18.8 % \$55,000-\$99,9999

**17.7% \$100,000 and over**

# HYPOTHESES TESTING

## BIVARIATE ANALYSIS (CORRELATIONS)

**Hypothesis 1: People who have higher education are less likely to have elevated systolic blood pressure.**

- There is negative relationship between education and systolic blood pressure. “r” is equal to  $-.168^{**}$ , and **hypotheses 1 is supported**. The significance is strong.

**Hypothesis 2: People who have higher income are less likely to have elevated systolic blood pressure.**

There is negative significant relationship between income and systolic blood pressure. r is equal to  $-.106^{**}$ ; **hypotheses 2 is supported**.

# HYPOTHESES TESTING

## MULTIVARIATE ANALYSIS

- **Hypothesis 1: People who have higher education are less likely to have elevated systolic blood pressure.**
- People who have higher education are less likely to have elevated systolic blood pressure. The relationship between education and systolic blood pressure is significant, and **hypothesis 1 is supported (-.071\*\*)**
- **Hypothesis 2: People who have higher income are less likely to have elevated systolic blood pressure.**
- **Hypothesis 2 is rejected**, as the relationship between income and systolic blood pressure is **NOT** significant in multivariate analysis  
**(-.026)**

# *CORRELATIONS VS BETAS*

Comparison of the correlation and betas for education of respondent shows lower strength because beta decreases from correlation  $-.168$  to  $-.071$ . The zero order correlation may have **overestimated** the effect of education on systolic blood pressure. Comparison of the correlation and betas for income of respondent shows beta is not significant on income variable

# THE RELATIONSHIP BETWEEN CONTROL VARIABLES AND DEPENDENT VARIABLE

- **Married/cohabiting** people have **lower** systolic blood pressure compared to singles.
- **Blacks** have **elevated systolic** blood pressure when compared to non-blacks.
- **Males** have **higher systolic blood pressure** than females.
- Systolic blood pressure is **higher** in older people.

# A COMPARISON OF THE MODELS

- $R^2$  for socio-demographic variables show significance ( $R^2 = .237$ ). This shows that socio-demographic variables explain **23.7 % variance** in systolic blood pressure.
- When the socioeconomic variables income and education were added, the  $R^2$  increases to **.244** and remain significant showing that all the variables together explain **24 % of variance**.

# DISCUSSION

- All socio-demographic variables are significant
- Amongst the socio-economic variables, higher educated people have lower blood pressure; income is not significant
- No multicollinearity between independent variables
- Screening of blood pressure one time event
- Longitudinal study may shed more light on impact of income

# LIMITATIONS

- Knowledge of participants' health
- One time screening of blood pressure.
- Income relationship were not significant to blood pressure in our study, but education brings the income level up, and social classes have impact on the health.