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.