

## Sigma's 30th International Nursing Research Congress

### Hypertension in Children: Etiology of a Health Disparity

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#### **Purpose:**

**Purpose and Significance:** The purpose of this secondary analysis is to explore the incidence of previously undiagnosed hypertension in 5<sup>th</sup> grade children in a large urban school district, and, further, to determine the relationship of childhood hypertension and BMI, gender, ethnicity.

It highlights the significance of health disparities when comparing White Americans and African Americans

- develop high blood pressure earlier in life
- have higher blood pressures
- have a 1.3-times greater rate of nonfatal stroke,
- have a 1.8-times greater rate of fatal stroke,
- have a 1.5-times greater rate of death attributable to heart disease

(U. S. Centers for Disease Control)

The significance of this study is based on two factors: 1) the poverty level of the children (Cleveland has the highest child poverty level in the U.S. and 100% of children in the city school district are eligible for free or reduced cost breakfasts and lunches.). 2) the lack of continuity in the health care of the children (the school district estimates that fewer than one half of the students have a medical home and receive much of their health care through emergency rooms and multiple clinics). To highlight the significance of inconsistent healthcare and caregivers, it is estimated that 34-38% of children diagnosed with hypertension, have end organ damage at the time of diagnosis.

#### **Methods:**

This is a secondary analysis of data from the project, "Nursing in Cleveland's schools". The original study that produced the data for this secondary analysis was a district wide health- screening program over a 7 year period of time. All 5<sup>th</sup> grade children were screened annually for elevated blood pressures (BPs). BPs were taken 3 times at the screening, averaged and the percentile determined. If the BP was in the 95<sup>th</sup> percentile or higher, they were taken on two more occasions. If the BP was at the 95<sup>th</sup> percentile or higher on each of these three occasions, the child was potentially hypertensive and referred on. This secondary analysis explored the correlations between the incidence of hypertension and the variables of gender, BMI and ethnicity.

#### **Results:**

- The sample for this analysis was 7398 children, 49.9% female and 51.1% male. The average age was 11.1 years.
- 408 children or 5.5% had BPs at the 95<sup>th</sup> percentile or higher on three occasions.
- 199 females and 209 males were identified-gender was not significantly associated with elevated blood pressures
- 42-44% of 5<sup>th</sup> grade children were found to have BMIs in the overweight or obese range each year of the screenings.
- The relationship between hypertensive level BPs and BMIs was significant at the .001 level.

### **Conclusion:**

Hypertension is a chronic condition that is a major contributor to burden of disease for individuals, families and society. This study highlights the hypertensive related health outcomes in African Americans and emphasizes the importance of early detection and treatment to control the effects of hypertension. In addition the data support the issue of obesity as a major contributor to the early development of hypertension.

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### **Title:**

Hypertension in Children: Etiology of a Health Disparity

### **Keywords:**

health disparity, hypertension in children and significance of school based health screenings

### **References:**

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**Abstract Summary:**

This is secondary analysis of blood pressure data in 7398 5th grade children collected over a seven year period, in a predominately African American population. It highlights the relationship of obesity, gender and ethnicity and hypertension in children

**Content Outline:**

## I. Introduction:

A. Define health disparity

B. Describe the disparity in the development of hypertension in African Americans and the health outcomes associated with it.

## II. Purpose of the study

A. Describe the incidence of hypertension in 5th grade children in a large urban school district

B. Describe the relationship of hypertension in 5th grade children and gender, obesity and ethnicity

## III. Description of Parent study for this secondary analysis

A. This was a 7 year program of school district wide health assessments completed by undergraduate nursing students as part of a partnership between and urban school district and an undergraduate nursing program.

B. Over 35,000 health assessments were completed.

## IV. Sample for the secondary analysis

A. 7398 5th grade children

B. 49.9% Female and 51.1% Male

## V. Results

A. 408 children or 5.5% of the 5th graders were found to be hypertensive.

B. Incidence of hypertension was highly correlated to the BMI category of the child with the greatest number of children identified as hypertensive, also being in the obese BMI category.

## VI. Conclusion

A. Early developing hypertension is another adverse outcome of the obesity epidemic

B. Undiagnosed and untreated hypertension may be a contributor to the disparity in hypertensive related health outcomes in African Americans.

First Primary Presenting Author

**Primary Presenting Author**

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**Author Summary:** Dr. Bertia Jennings is an advanced practice nurse in the area of psychiatric/mental health nursing. She has a long established interest in the health of children marginalized by poverty and other social conditions. As a doctoral student she became interested in hypertension as a contributor to adult cardiovascular disease. That interest led to this study.

Second Secondary Presenting Author

**Corresponding Secondary Presenting Author**

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**Author Summary:** Dr. Lotas participated in this study as a committee member. She will not be presenting at the conference. Dr. Lotas has over three decades of nursing research. She has published research in nursing education, behaviors and nursing curriculum.

Third Author

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**Author Summary:** Dr. Faye Gary, EdD, RN, FAAN, is the Medical Mutual of Ohio Kent W. Clapp Chair and Professor of Nursing at the Frances Payne Bolton School of Nursing at CWRU. She also holds a secondary appointment with the Department of Psychiatry at the School of Medicine. Her passion for excellence and assisting the next generation in decreasing health disparities has lead her to present internationally and nationally as a keynote speaker and presenter.

Fourth Author

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**Author Summary:** Dr. Patricia McDonald brings years of experience as a psychiatric nurse practitioner, educator, researcher and advocate for minority health. Her interest in minority health led to her involvement in this project.