**Food Insecurity in the Development of Chronic Diseases**

Alexander Seneta, Mae Ciaccio, PhD, and Nathaniel Krundick, PhD

Chicago College of Osteopathic Medicine, Biomedical Science Program, Clinical Psychology Program, Midwestern University, Downers Grove, IL

**INTRODUCTION**

- Over 48 million Americans, including 12 million children and 7 million seniors, live in homes with food insecurity and limited access to adequate nutritious food.
- In a Chicago, Illinois suburb, the non-profit organization, Loaves and Fishes provides hunger relief and emergency assistance to low-income families. Over 132,000 people are served yearly by Loaves and Fishes. Approximately 72% of their clients have incomes or below 100 percent of the Federal Poverty Level.
- Food insecure adults are more likely to develop chronic illness, such as diabetes, hypertension, heart disease. Difficulty paying for food and daily needs can lead to poor self-care behaviors and poor outcomes for chronic illnesses.
- Type 2 diabetes and depression are common co-morbid high-prevalence chronic disorders.
- The focus of this research study is to understand how food insecurity impacts the overall health of this adult population.
- This study was approved by the Midwestern University Institutional Review Board and Loaves and Fishes.

**HYPOTHESIS**

- There is a correlation between food insecurity and chronic illnesses in low-income adults currently receiving food assistance from Loaves and Fishes.
- Food insecurity contributes to a higher incidence of diabetes mellitus Type 2 than in the general population.
- There is an inverse relationship between food insecurity and chronic illnesses in order to provide public health recommendations for improving awareness and education.

**METHODS**

- Adults currently receiving food assistance from Loaves and Fishes were asked to voluntarily complete a Nutrition and Health Questionnaire prior to and after attending an educational session which focused on diabetes, hypertension, heart disease, and nutrition.
- To statistically identify potential links between food insecurity and chronic illness, the study used self-assessment surveys completed by adults currently receiving food assistance from the Principal Investigator, if requested.
- A 5-point Likert scale was used for self-assessment.
- Participants understood that more fruits and vegetables should be eaten; however, the concept of a cup of fruits and vegetables was not remembered.
- The focus of this research study is to understand how food insecurity and chronic illness impacts the overall health of Loaves and Fishes’ clients.

**OBSERVATIONS**

- Of the 203 adults who completed the pre-survey:
  - Pulmonary Diseases: 15% had asthma
  - 4.9% had chronic bronchitis
  - 16.2% had type 2 diabetes
  - Cardiovascular diseases: 30% had high blood pressure
  - 2.5% had previous heart attack
  - Psychiatric Diseases: 23% had depression
  - 15% had anxiety
  - 5.4% had bipolar
  - 1.9% had schizophrenia

**PRE-SURVEY RESULTS**

- The average pre-survey response to the BMI was 39.7 and the average post-survey response was 31.3.
- The correlation between BMI and quality of life was found to be **r = -0.114, p = 0.121**.
- The survey was offered in both English and Spanish, with personal resources and MyPlate sheets provided.
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**POST SURVEY RESULTS**

- Of the 203 adults who completed the post-survey:
  - Pulmonary Diseases: 16% had asthma
  - 4.9% had chronic bronchitis
  - 16.2% had type 2 diabetes
  - Cardiovascular diseases: 30% had high blood pressure
  - 2.5% had previous heart attack
  - Psychiatric Diseases: 23% had depression
  - 15% had anxiety
  - 5.4% had bipolar
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**CONCLUSIONS**

- Health care professionals should seek to educate those living with food insecurity about nutrition and chronic illnesses.
- Medical professionals need to actively promote healthy lifestyles, nutrition, and preventative medicine to achieve the goal of reducing chronic diseases.

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