Disparities in Rates of Diagnosis of Cardiovascular Disease in the Black Population Compared to the White Population in Massachusetts

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What Is Cardiovascular Disease?

- Cardiovascular disease (aka heart disease) refers to any diseases which have to do with the heart and blood vessels
  - Most commonly due to atherosclerosis
- Some health issues which fall under the term “heart disease” include:
  - Coronary heart disease, heart failure, stroke, hypertension
- Hypertension (HTN) means high blood pressure
  - One of the major risk factors in developing heart disease
Cardiovascular Disease as a Health Disparity

● What is a health disparity?
  ○ “Preventable differences in the burden of disease...or opportunities to achieve optimal health that are experienced by socially disadvantaged populations”

● CDC classified the differences in rates of death due to cardiovascular disease as a disparity in the United States (on the basis of race)
Disparities in Cardiovascular Disease: Stroke

Cardiovascular Disease:
- Hypertension
- Coronary artery disease
- Heart attack
- Stroke

Percentage of Adults Who Suffered from a Stroke by Race

Disparities in Cardiovascular Disease in Massachusetts

Racial Health Inequities in Age-Adjusted Rates of Hospitalization, 2014

How Did We Get Here?

Cardiovascular disease is the second leading cause of death in Massachusetts. Why?

Common Risk Factors for Cardiovascular Disease

- Obesity
- Diabetes
- High Total Cholesterol
- Hypertension

Massachusetts State Health Assessment (pp. 251). (2017). Boston, MA: Massachusetts Department of Public Health.
Social Determinants of Health and Cardiovascular Disease

The medical ramifications of these social disparities lead to the common risk factors mentioned above:

- Food deserts
- Air Pollution
- Racism
- Income
Air Pollution

● Study found an association between high air pollution levels and increased risk for acute cardiovascular disease
  ○ Positive association between biomarkers for oxidative stress and markers for short-term air pollution (Li, 2016)

● Air pollution concentration levels highest in urban non-hispanic black populations
  ○ Specifically, looked at the PM 2.5 and NO$_2$ concentrations over an 8-year period
  ○ Looked at demographics from the Census Data (Rosofsky, 2018)
Racism and HTN

- Found association between perceived racial discrimination and hypertension using a meta analysis
  - Keywords used: “blood pressure/hypertension/diastolic/systolic, racism/discrimination/prejudice/unfair treatment”

https://doi.org/10.1037/a0033718
Low nutritional foods are cheaper and more accessible

Income determines shopping habits

There's a 70 percent chance that an overweight adolescent will remain overweight or obese as an adult

Notes: This figure presents Nielsen Homescan data for 2004-2016. Each panel presents a binned scatterplot of a dietary quality measure against average household income across all years the household is observed in Homescan, regardless of age and year indicators and household size. The first 10 panels present the “healthy” dietary components of the Healthy Eating Index, while the final five panels present the “unhealthy” components. Observations are weighted for national representativeness.
Food Deserts

- Hard to access healthy foods
- Rely on convenience stores
- Rely on public transportation

Hunt Allcott, Rebecca Diamond, Jean-Pierre Dubé, Jessie Handbury, Ilya Rahkovsky, and Molly Schnell• Food Deserts and the Causes of Nutritional Inequality
May 3, 2019
Genetics Plays a Role

- “Runs in the family”
- Genes can double the risk of heart disease
Effects on the Black Community

Premature mortality rates in Massachusetts, 2016

The state Department of Public Health defines the premature mortality rate as the number of deaths before the age of 75, per 100,000 residents.

- Blacks have the lowest life expectancy
- More likely to die young

Schoenberg, S. (2019, January 3). Why are black residents in Massachusetts more likely to die young?
Education is Key

Healthy Choices

Budgeting

Exercise

Healthy Lifestyles
Conclusions

● Blacks are more likely to die from heart disease than whites
  ○ Risks factor significantly increase chances of developing heart disease
  ○ Some of which include: air pollution, racism, income, food desserts, and genetics
● Heart disease alongside other socioeconomic factors cause blacks to die young
● It is important to educate the black community to reduce and eliminate the health disparity
Questions?
Works Cited


Number of Heart Disease Deaths per 100,000 Population by Race/Ethnicity. (2020, March 04). Retrieved from https://www.kff.org/other/state-indicator/number-of-heart-disease-deaths-per-100000-population-by-raceethnicity-2/?currentTimeframe=0


