Disparities in the Prevalence of Diabetes in African-Americans Compared to General Massachusetts Population

Summer Enrichment Program 2020

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Type II Diabetes

- There are three types of diabetes: Type 1, Type II, and gestational diabetes
  - Diabetes Mellitus Type II:
    - Accounts for 90-95% of individuals with Diabetes mellitus
    - Previously referred to as non-insulin-dependent diabetes or adult-onset diabetes
    - The body uses insulin inefficiently thereby leading to insulin resistance → increased blood sugar
Prevention, Diagnosis, and Treatment

Who is At Risk?

- Having prediabetes
- Being overweight or obese
- Age 45 or older
- An inactive lifestyle
- African American

Treatment

- Diabetic meal plan
- Regular physical activity
- Medicines

Diagnosis

- A1C
- Blood Glucose Test
- Glucose in Urine Test
- Microalbumin Test
What is a Disparity?

- Disparity = Difference
- If a health outcome is seen to a greater or lesser extent between populations, there is disparity
- Our Focus: disparity in prevalence of Type II Diabetes Mellitus among the African-American population in Massachusetts

Why Do They Exist?

- Conditions in which people are born, grow, live, work and age that shape health

### Social Determinants of Health

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<th>Neighborhood and Physical Environment</th>
<th>Education</th>
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### Health Outcomes
- Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Massachusetts Population Demographics by Race

Proof of Disparity

Overall Incidents in Massachusetts

- 10.5% of the US population has diabetes (34.2 million people)
  - In MA, only 8.9%
  - Can infer the issues with diabetes in other states are more severe

Diabetes Mortality

- 7th leading cause of death in world, 8th in MA
- Mortality in US 25.7 per 100,000
  - MA is 15.1 per 100,000
- Another disparity exists
  - Death rates
  - Black, Non-Hispanics are more than 2x at risk for diabetes mortality

Reasons for Disparity

- Leading risk factors for diabetes:
  - Obesity **
  - Family history
  - High blood pressure **
  - Lower socioeconomic status **
    - Poor eating habits
    - Less access to healthcare
  - Possible genetic dispositions
  - Inactive
  - Age
Obesity

- Obesity = excess of adipocytes
  - Often also correlated with dysfunction in this tissue
  - Adipocytes produce resistance
- Severe obesity by race in MA
  - Total: 9.2%
  - Non-Hispanic black: 13.8%
  - Hispanic: 7.9%
  - White: 9.3%
  - Asian: 2.0%

Socioeconomic Status (part 1)

- Lower SES leads to poorer health decisions
- Less access (care and treatment)

Socioeconomic Status (part 2)

- Correlated with level of inflammatory signals in blood
  - Diabetes = inflammation related

Socioeconomic Status and African Americans

Structural Racism

What we mean by “structural race”:

“Structural Racism” points to multiple institutions
The ways our public and private institutions interact to produce barriers to opportunity and racial disparities.
Intent to discriminate is irrelevant
Structures just do what they do and reinforce disinvestment and disparities.
Addressing Health Disparities in Diabetes

- Patient Factors
  - Diabetes knowledge and behavior
  - Health literacy and numeracy
  - Trust and perceived cultural competence

- Provider Factors
  - Unconscious bias/stereotyping
  - Cultural competency
  - Communication

Addressing Health Disparities in Diabetes Ctd.

- Massachusetts Diabetes Prevention Program (DPP):
  - Practical ways to eat healthy
  - How to add physical activity to your daily routine
  - How to manage stress
- Prediabetes
  - Research has shown that making small changes in your lifestyle can reduce your risk of diabetes. These changes are:
    - Losing 7% of bodyweight (about 15 lbs. if you weigh 200 lbs.)
    - Exercising at least 150 minutes a week (about 30 minutes, five days a week)
- Lipid control along with glycemic and BP control helps to reduce the complications associated with diabetes
Bottom Line

- There’s a disproportionately higher prevalence of diabetes in African Americans compared to their white counterparts.
- The disparities are a result of socioeconomic factors, environment, quality of healthcare, genetic factors, and more.

Works Cited


● “Diabetes | Type 1 Diabetes | Type 2 Diabetes.” MedlinePlus, U.S. National Library of Medicine, 8 June 2020, medlineplus.gov/diabetes.html#cat_92.


● White, Richard O., et al. “Health Care Disparities and Diabetes Care: Practical Considerations for Primary Care Providers.” Clinical Diabetes, American Diabetes Association, 1 July 2009, clinical.diabetesjournals.org/content/27/3/105.figures-only.