

THE ASSOCIATION BETWEEN DEPRESSION AND METABOLIC CONTROL AMONG AFRICAN AMERICANS AND LATINO WOMEN WITH TYPE 2 DIABETES

African American and Latino women, often of low socioeconomic status, suffer from the nationwide epidemic of type 2 diabetes. Research has shown that many individuals with diabetes also suffer from depression. A substantial number of African American and Latino women are diagnosed with type 2 diabetes, which is likely due to the amount of body fat and cultural influences on their diet. Poor glycemic and metabolic control have been linked to patients with diabetes. Chronic hyperglycemia is a well-established predictor of the onset of diabetes complications in both type 1 and type 2 diabetes. This cross-sectional study set out to determine the relationship between lipid panels and depression in type 2 diabetes in a socioeconomically disadvantaged population of Latino and African American women with type 2 diabetes.

The study focused on the following variables associated with diabetes: hemoglobin, creatinine, hematocrit, high density lipoprotein (HDL), low density lipoprotein (LDL), triglycerides, blood urea nitrogen, and total cholesterol and how they contribute to diabetes. Women who have already been diagnosed with diabetes were randomly selected to participate in the study. After obtaining participants' consent, the researchers reviewed patient charts to examine lipid panels of women with diabetes. This study determined the association of metabolic control among Hispanic and African American women with diabetes and the association between the parameters of diabetes related to the status of glycemic and lipid control among Latino and African Americans with diabetes.

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BACKGROUND

Diabetes is a disorder of metabolism and results when there is an insufficient insulin activity in the pancreas. Diabetes results when the pancreas does not produce any insulin, produces very little insulin, or when the body does not respond appropriately to insulin. Insulin is made by the pancreas and is needed to breakdown the food we eat for energy. The African American and Latino diet consists of foods that are high in fat. The African American diet consists of fried chicken and other foods that are extremely high in cholesterol. Much like the African American diet, the Latino diet also consist of foods that contain extremely high levels of cholesterol such as chorizo. These high-fat foods contribute to obesity and lead to increased numbers of individuals diagnosed with type 2 diabetes.

Depression involves the body, mood, and thoughts and affects the way an individual eats and sleeps, self-esteem, and perceptions in life. Hemoglobin is the oxygen-carrying pigment that gives blood its red color and it is also the predominant protein in red blood cells. Hemoglobin A1c is a minor component of hemoglobin to which glucose is attached. The complications of diabetes can be delayed or prevented if the HbA1C level can be kept close to 7%.

The variables associated with type 2 diabetes are:

- Hematocrit
 - The Hematocrit measures how much space in the blood is occupied by red blood cells

- Hemoglobin
 - A high hemoglobin level can lead to kidney failure
 - The oxygen carrying pigment that gives blood its red color
 - The predominant protein in red blood cells
- Total cholesterol
 - Builds and repairs cells, it is used to produce sex hormones like estrogen and testosterone, it is converted to bile acids to help food digestion.
- Low density lipoprotein (LDL)
 - LDL carries mostly fat and only a small amount of protein from the liver to other parts of the body
- High density lipoprotein (HDL)
 - HDL aids in the production of cell membranes, some hormones and vitamin D.
- Triglycerides
 - Triglycerides are a form of fat that comes from food intake and it is also produced by the body
- Creatinine
 - A chemical waste product that is generated from muscle metabolism
 - Indicates kidney dysfunction
- Blood urea nitrogen
 - A test that measures the amount of blood urea nitrogen that comes from the waste product of urea

METHODS

Once approval from the institutional review board at Charles R. Drew University was received, patients were recruited from a randomized list in King/Drew Medical Center's 5B Diabetes and

Fingerstick Clinics. Patients were then approached by research assistants and given a flyer. Those who accepted, set up an appointment in the Clinical Research Center. They were paid \$20 for participating in the study. HbA1C, lipid panel, chemistry, and hematology lab results were extracted and recorded. The patients were given a face-to-face Becks Depression Inventory (BDI) to assess their depression. Once the patients completed the survey, the data was entered into an Excel document and coded. We used the Statistical Analysis System to find any associations between the variables associated with type 2 diabetes. We used the following tools throughout the process: 1) Abstraction Form to obtain sample characteristics of the individuals that participated in the study; 2) Affinity Software (lab charts)-the software that contained the Hb1AC, lipid panels, chemistry and hematology lab results; and 3) Becks Depression Inventory, a validated 21-question survey that assesses depression.

RESULTS

In all, 65 participants, age range between 25 and 70 years, were studied.

Range of annual income for study participants was between \$2,376 and \$24,000 and length of time with diabetes ranged between five months and 38 years. Patients reported using between one and 13 medications. We found HbA1C levels ranged from 4.7–13.5 and 51% were depressed according to responses to the Becks Depression Inventory.

Most of the people that were depressed had a low HDL (<40) and we found a significant statistical relationship between HDL and depression. No other relationships between depression and type 2 diabetes were found.

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FOR MORE INFORMATION:

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2. <http://www.blackhealthcare.com/BHC/Diabetes/Description.asp>
3. <http://www.psychologyinfo.com/depression/description.html>
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