

DEPRESSION, HEALTH BELIEFS, AND LOCUS OF CONTROL

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Diabetes affects nearly 6.3% of the American population and depression has been found to be two to three times higher in patients with diabetes when compared to patients without diabetes. Consequently, it has been found that there is an increased number of diabetes complications and poor glycemic control in depressed patients. Both Hispanics and African Americans are at a greater risk of type 2 diabetes and its complications than Caucasians. Furthermore, the minority, socio-economically disadvantaged, and underserved continue to battle with an epidemic of undiagnosed, untreated mental disorders, due in part to the stigma associated with these enigmatic disorders.

This study examined the relationship between glycemic control in minority patients, health beliefs, and mental health state. This cross-sectional study recruited patients from a randomized list of patients with diabetes in King/Drew Medical Center's 4M Diabetes and Finger-Stick Clinics. Patients consenting to participate in the study responded to Beck's Depression Inventory, Health Belief Scale, and Multidimensional Health Locus of Control. Beck's Depression Inventory is a validated tool used to diagnose a patient with depression. Patients' HbA1c, fasting blood glucose, and fasting lipid panel from the last six months were extracted and recorded.

Preliminary results showed that most patients knew how to control their diabetes, but many confessed to not following recommended regimens. Results were analyzed through SPSS software and presented at a future NIH Symposium.

MEASURES

Health beliefs and locus of control have been found to be an integral part of an individual's coping mechanism for his or her disease; at the same time, depression, which affects coping skills, is intertwined with health beliefs. As the prevalence of diabetes among African Americans and Hispanics increases and demographic expansion continues, it is expected that we will see a growing segment of the population with diabetes. Few studies have examined the prevalence of depression, health beliefs, and locus of control in Latinos and African Americans with diabetes. By understanding the health beliefs of these two populations, models of diabetes and depression may be used to decrease devastating medical complications and patient-reliability.

SPECIFIC AIMS

Our study set out to accomplish three specific aims:

- 1) To determine the association between depression and glycemic control among Hispanic and African Americans with diabetes;
- 2) To determine the association between depression and parameters of diabetes related to health beliefs and locus of control measurements in Hispanic and African Americans with diabetes;
- 3) To determine the association between parameters of diabetes related to health beliefs and locus of control measurements and the status of gly-

cemic control in Hispanics and African Americans with diabetes.

METHODS

Procedures

We received approval from the Institutional Review Board at Charles R. Drew University and collected a cross-sectional random sample of 400 patients with diabetes seen in the King/Drew Medical Centers (KDMC) Diabetes and Finger-Stick clinics for the past 12 months. Research assistants explained the study to the patients chosen from the randomized list. The study was explained and patients received and signed an informed consent form. Patients were interviewed in a private room. Subjects' charts were reviewed for HbA1c, fasting blood glucose and fasting lipid panel. All lab results from the previous six months were recorded. If a study participant was not a current patient, a blood sample was drawn in the lab. Those who did not agree to participate were recorded only by ethnicity, age, and sex. Participating subjects received \$20 for their travel and time in the study. Surveys were scored and recorded in an Excel document and then converted into data for analysis in SPSS software.

DATA ANALYSIS

Materials

Data Abstraction Form

This form solicits demographic information, such as age, sex, ethnicity, household income, ability to pay (ATP),

From the Charles R. Drew University of Medicine and Science; Los Angeles, California.

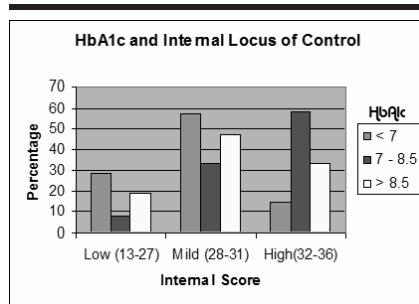


Fig 1. Patients who are depressed have a greater internalized (Locus of Control) approach to their diabetes and worse control of their HbA1c. (trend) ($P=.081$)

Medicare, Medicaid, or other pay, type of diabetes, household individuals, marital status, employment status, hospital admission history, emergency room visit history, and missed clinic appointments.

Beck's Depression Inventory (BDI)

This is a 21-item questionnaire that assesses depression and its symptoms. It has been used in hundreds of studies and has been found to be valid and reproducible. It is currently used by primary care physicians to screen for depression and found to be an effective screening test for major depression in patients with diabetes.

Health Beliefs Scale (HBM)

The HBM was developed as a systematic method to explain and predict preventive health behavior and focuses on the relationship of health behaviors, practices, and utilization of health services. It has 4 subscales: Total Barriers, Social Support, Impact of Job on Therapy, and Benefits of Therapy.

Multidimensional Health Locus of Control (MHLC) Forms B and C

Form B predicts general outcomes and demonstrates an advantage in explaining depression. Form C is a predictor of condition-specific outcomes. We examined both scales and used Form B to understand depression and Form C to understand outcomes, such as HbA1c.

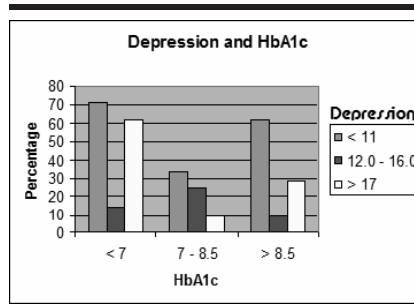


Fig 2. Percentage of participants with depression, based on a Beck's score ≥ 12 . ($P=.419$)

RESULTS

Forty subjects participated; the ratio of our ethnic participation is representative of the population at KDMC. Hispanic females ($n=10$) comprised the majority of subjects and African-American females ($n=2$) the minority. More than a third (38.3%) eligible to participate declined participation in the study. Hispanics showed the most reluctance to participate. A large majority of the subjects were unemployed. Of those participating, 55% were not depressed, 15% had probable depression, and 30% had been diagnosed with depression. No relationship was found between HbA1c and depression, but the sample was small. Trends in our study indicate that the higher the level of support as measured by the Health Beliefs scale, the less depression ($P=.08$). Patients who had higher internal locus of control had higher levels of HbA1c, and thus, less controlled diabetes ($P=.08$) (Figures 1-3).

CONCLUSION

Forty-five percent of our sample was depressed. HbA1c levels may be affected by depression, but very few studies exist to determine this correlation in minority populations. In our study to date, results show no relationship between depression and HbA1c. There was no relationship between depression and LDL

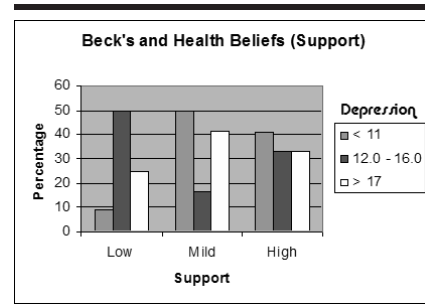


Fig 3. Patients who were not depressed had a higher support system. (trend) ($P=.089$)

in our sample ($P=.581$). Similarly, no relationship between depression and triglyceride levels was found ($P=.790$). Patients with a lot of family support demonstrated low levels of depression. Patients with an internal control had higher HbA1c levels. In this study, Latino females had the highest depression rates. African-American males had worse HbA1c levels and more depression than African-American females.

IMPLICATIONS

These preliminary results will be expanded in the next 12 months, when we plan on attaining 300 surveys. To improve health outcomes among patients with diabetes, we need to assess their support systems and understand other internal mechanisms. For example, although a high internal locus of control may be ideal for individuals without diabetes, it may cause stress for patients with diabetes. In this case, patients feel overwhelmed in treating their disease and do not comply. It is, therefore, important to re-evaluate diabetes education programs and improve self-management skills and supportive networks.

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