

Oral Session 9

Research Study

Title: "The Association of Hemoglobin A1c Levels and Depression Among Adults With Diabetes in the United States"

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Introduction and Objective. Diabetes mellitus is linked to a decreased health-related quality of life, including poor mental health. Blood levels of Hemoglobin A1c (HbA1c) is an important marker in the diagnosis and management of diabetes mellitus. The study's main objective was to assess the association between HbA1c levels (as a measurement of glucose levels adequate control) and depression among people with diabetes mellitus in the US.

Methods. We performed a secondary analysis of data from participants of the National Health and Nutrition Examination Survey (NHANES) 2017-2018. The main exposure was HbA1c levels dichotomized into ≤ 7 and > 7 . The primary outcome was the Patient Health Questionnaire (PHQ-9) scores, dichotomized into no depression (scores 0-4 points) and depression regardless of severity (scored 5-27). Logistic regression was used to assess independent associations.

Results. Our sample included 429 adults with diabetes in the United States. About 41.5% had HbA1c > 7 and 26.8% presented some level of depression. The unadjusted analysis indicated that compared to adults with diabetes with HbA1c > 7 , those with HbA1c ≤ 7 had 1.5 times greater odds to have some level of depression (OR=1.5, 95% CI 1.0-2.1, p-value = 0.033). However, in the analyses adjusted for sex, race/ethnicity, poverty, BMI, and sedentary lifestyle, the association between HbA1c levels and depression was no longer significant (OR =1.2, 95% CI= 0.9, 1.8, P-value = 0.256). Other factors increasing the odds of depression included lower income to poverty ratio ≤ 1.3 (OR 2.9, 95% CI 1.0, 8.5 P-value 0.048), and sedentary lifestyle of 5-10 hours and > 10 hours (OR=2.7 95% CI 1.6, 4.5 P-value = 0.001 and OR=5.2, 95% CI 1.7, 15.4, P-value = 0.006, respectively).

Conclusions-Implications. Our study found no evidence for an association between HbA1c levels and depression. Due to these limitations in power and potential selection and measurement bias, further prospective studies in this field are needed. Implementation of depression screenings in diabetics may allow for timely treatment to those affected improving the mental health of this population.