Racial Discrimination and Metabolic Control in Women with Type 2 Diabetes

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INTRODUCTION

As the United States becomes ever more diverse, health researchers are increasingly interested in the effects of racial discrimination on health. Self-reported exposure to racial discrimination is linked to a variety of stress-related disorders. Exposure to racial discrimination can be stressful, and repeated exposures may confer cumulative stress effects. Although data are not entirely consistent, laboratory and cross-sectional studies have found an association between stress and impaired glucose regulation. Prospective studies of persons with diabetes show that major stressful life events and daily hassles predict worse glycemic control. Thus, exposure to racial discrimination could be a novel risk factor for insulin resistance and/or hyperglycemia. To date, evidence linking self-reported racial discrimination to metabolic control is extremely limited. Our study investigated the relationship between self-reported exposure to racial discrimination and metabolic function in type 2 diabetes.

The effects of racial discrimination on metabolic control may be particularly germane for women, who bear a disproportionate diabetes burden. Furthermore, at a comparable frequency of racist events, women report greater distress about those events than men. Because of the unique legacy of forced migration, slavery, and legally enforced segregation in the United States, early research focused exclusively on Black Americans. More recent literature, including our own, has documented that the deleterious effects of unfair treatment may cross racial lines. Therefore, the effects of racial discrimination may be best studied in a sample of minority participants and White comparators, for whom exposure to racial discrimination would be expected to vary widely.

Insulin resistance (IR) reflects the body’s ability to use available insulin and is strongly influenced by adiposity, particularly central adiposity. Glycosylated hemoglobin (HbA1c, or A1c) is a relatively long-term measure of glycemic control, and reflects weeks to months of medical management, particularly the use of exogenous insulin. Thus, IR and A1c reflect related but distinct aspects of metabolic control. We examined associations among self-reported lifetime history of exposure to racial discrimination and IR and A1c in Black and White women with type 2 diabetes. We worked from a model in which exposure to stressful racist events activates biological changes such as elevated stress hormones, and behavioral changes such as appetitive behaviors, that can impair metabolic regulation and increase blood glucose over time. We hypothesized that higher self-reported racial discrimination would be associated with higher IR and higher A1c.

PARTICIPANTS AND METHODS

Seventy-seven participants with type 2 diabetes were recruited by advertisements.

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Purpose: We investigated whether self-reported racial discrimination was associated with insulin resistance (IR) and glycosylated hemoglobin (A1c) in women with type 2 diabetes in the United States, after controlling for covariates.

Methods: Seventy-seven Black and White women with type 2 diabetes completed the Experiences of Discrimination Scale, which assesses self-reported lifetime frequency of racially motivated discrimination. Participants provided fasting blood samples for assessment of glucose and insulin for determination of IR and A1c. Covariates included age, education, waist circumference, diabetes distress, and stressful life events.

Results: In unadjusted regression analysis discrimination was significantly associated with IR. There was a trend for a race by discrimination interaction, with a weaker effect for Blacks than Whites. Follow up analysis showed that discrimination was significantly associated with IR in both Blacks and Whites, even after adjustment, as was waist circumference. In unadjusted regression analysis, discrimination was significantly associated with A1c. There was a significant race by discrimination interaction. Follow up analysis showed that discrimination was not significantly associated with A1c among Blacks, but was among Whites, even after adjustment, as was diabetes distress and insulin use.


Key Words: Discrimination, Racism, Diabetes, Glycemic Control, Women