

**Introduction**

- Black adolescents with Type 1 Diabetes (T1D) are at increased risk for disparities in health outcomes such as suboptimal glycemic control<sup>2</sup>
- Accessibility of neighborhood resources for diabetes care is limited for many Black adolescents with T1D (healthy food, safe exercise opportunities)
- Research on the effects of neighborhood characteristics on pediatric diabetes health has been limited to date

**Purpose**

- To determine the degree to which glycemic control is associated with residence in segregated neighborhoods or neighborhoods with high adversity over an 18-month period

**Methods**

**Recruitment Sites:**

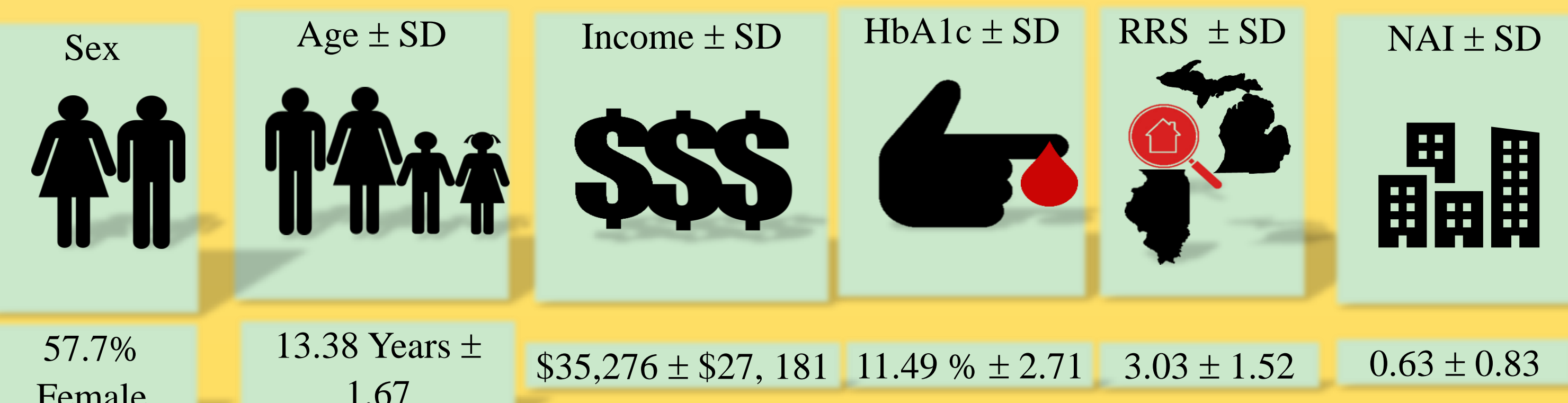
- Participants were recruited from 7 midwestern pediatric diabetes clinics in Detroit (3) and Chicago (4) for participation in a randomized clinical trial

**Inclusion Criteria:**

- Adolescent aged 10 – 15
- Diagnosed with T1D for at least six months
- Self-identifies as Black

**Demographics:**

N= 136



**Methods**

**Racial Residential Segregation<sup>1</sup>**

- Calculated at the block group level based on US census data using Location Quotients
- Location Quotients (LQs) represent the ratio of Black patients to the total population in the block group compared to the same ratio in the metro area



**Neighborhood Adversity Index<sup>2</sup>**

- Calculated at the block group level using US Census data
- Used 9 neighborhood adversity indicators<sup>2</sup>: Median household income; percent persons in poverty; percent of households with no vehicle; percent of persons with less than a 12th grade education; percent of households renter occupied; percent females in management occupations; percent males in management occupations; percent of vacant; homes & percent female headed households



**Dependent Variable:**

- HbA1c was used as the best measure for glycemic control in the past 2-3 months. Obtained from FDA-approved home test kits

**Data Collection:**

- RRS and NAI were calculated at baseline (study entry) while HbA1c was collected at baseline and 18-month follow-up

**Analyses:**

- Partial correlations controlling for family income, age, sex, number of parents.
- Treatment assignment was controlled at 18-months

**Results**

**Baseline**

- HbA1c was significantly associated with RRS (r=.32, p=.002)
- HbA1c was significantly associated with NAI (r= 0.35, p< .001)

**18-Month Follow-Up**

- HbA1c was significantly associated with RRS (r=.38, p< .001)
- HbA1c was significantly associated with NAI (r=.25, p=.016)

**Conclusion**

- Residing in more adverse and more highly segregated neighborhoods was associated with poorer glycemic control over an 18-month window, even after accounting for family income and other demographics
- Training culturally competent physicians who consider social determinants of health such as neighborhood factors is paramount to overcoming healthcare disparities
- Healthcare providers can engage in routine screening of families for neighborhood adversity during health care visits and connect them to community resources
- Further studies are needed to understand if moving between neighborhoods affects glycemic outcomes or whether neighborhoods affect long-term health

**References**

1. Ellis, DA, Cutchin, MP, Idalski Carcone, A, Evans, MA, Weissberg-Benchell, J, Buggs-Saxton, B, Boucher-Berry, C, Miller, JL, Drossos, T, Dekelbab, MB, Worley, J. (in press) Racial Residential Segregation and the Health of Black Youth with Type 1 Diabetes. *Pediatrics*.
2. Ellis DA, Cutchin MP, Templin T, Carcone AI, Evans M, Weissberg-Benchell J, Buggs-Saxton C, Boucher-Berry C, Miller JL, Al Wazeer M, Gharib J\*, Mehmood Y\*, Worley J. (2020). Effects of family and neighborhood risks on glycemic control among young black adolescents with type 1 diabetes: Findings from a multi-center study. *Pediatric Diabetes*, 22, 511-518. doi: 10.1111/peidi.13176.

**Acknowledgements and Contact**

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2. We wish to thank and acknowledge all the families who participated in the study
3. Please contact Zechariah Jean at zechariah.jean@med.wayne.edu for any further queries