PROJECT SUMMARY

Rates of obesity are high in adolescents, with these youth at greater risk for developing metabolic complications than their lean peers. Poor metabolic function is associated with worse health outcomes, higher health care costs, and other health comorbidities; however, not all youth with obesity develop metabolic complications. Black youth have fewer metabolic complications compared to White youth, despite having among the highest rates of obesity. Understanding unique protective factors that slow the progression to poor metabolic health is necessary for reducing adverse health outcomes and improving the quality of life of adolescents with obesity. Thus, the specific aims of the proposed research are: 1) to examine differences in weight- and race-based stigma between Black adolescents who have obesity *without* metabolic complications (OMC-) and matched Black adolescents who have obesity *with* at least 2 metabolic complications (OMC2+); 2) to evaluate differences in physiological stress and psychological stress between OMC- and OMC2+ adolescents; and 3) to explore differences in resilience between OMC- and OMC2+ adolescents. We will use a case-control cross-sectional design to conduct 100 interviewer-administered surveys with caregivers and Black adolescents with and without metabolic complications in the US Midsouth. We will examine two groups of Black youth (aged 11-17) with obesity (defined as having a waist circumference ≥90th percentile). The OMC- group will include 50 adolescents with obesity who have optimal levels of blood pressure, cholesterol, glucose, and liver function. The OMC2+ group will include 50 adolescents with obesity who have two or more metabolic complications (i.e., high blood pressure, elevated triglycerides, low high density lipoprotein (HDL), insulin resistance, and/or impaired liver function) matched to OMC- youth by age and sex. Quantitative surveys will examine caregiver and youth reports of weight- and race-based stigma, psychological stress, and resilience. Physiological stress will be assessed via salivary cortisol (diurnal and awakening response). We will obtain data on metabolic function including: blood pressure, triglycerides, HDL, Homeostatic Model Assessment of Insulin Resistance (HOMA-IR), and liver function. Given known associations with study outcome variables, we will obtain measures of income, physical/mental health, and dietary intake, and as well as measures of physical activity and sleep patterns via actigraphy. This innovative study will contribute to the field's understanding of why some Black youth are not yet exhibiting metabolic complications while others are. While genetic factors may account for ~27% of these variations, biopsychosocial factors have been underexplored. Thus, by studying this rare group of OMC- adolescents, we will obtain data on mutable factors that are relevant to a community most impacted by obesity. Knowledge gained will serve as pilot data for an R01 grant to develop a strength-based, culturally-informed intervention aimed at decreasing health disparities and maintaining metabolic health among Black youth with obesity.