SICKLE CELL FIT: INCREASING PHYSICAL ACTIVITY IN YOUTH WITH SICKLE CELL DISEASE

Poster #

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Background

Research Setting: Pediatric Sickle Cell Disease (SCD) Clinics is located at University of Mississippi Medical Center (UMMC), an academic medical center, located in Jackson, Mississippi

Unmet Need:

- Youth with sickle cell disease (SCD) have high rates of cardiometabolic disease [1, 2] compared to youth without
- Nearly 25% of youth with SCD are overweight or obese
- Few evidence-based exercise interventions for youth with SCD

Project Aims

- **Aim 1.** Develop Sickle Cell FIT program with community stakeholders and the patient community
- **Aim 2.** Test the feasibility of the Warrior FIT intervention among youth with SCD

Study Design

Study Population:

- Youth-caregiver dyads: Youth with SCD ($N = 40$), and a caregiver, will be recruited from the UMMC Pediatric SCD Clinics. Eligibility include the following: a) 12-21 years; b) any SCD genotype; c) daily access to an Internet-enabled device, and d) demonstrate willingness to exercise

Study Procedures:

- Establish a Sickle Cell FIT community board to develop Warrior FIT intervention
- Conduct qualitative interviews to understand barriers/facilitators for patients with SCD
- Develop Warrior FIT intervention
- Recruit 40 youth-caregiver dyads
- *Pre-post Assessment:* Dyads will complete self-reported questionnaires and complete measures of physical fitness
- Deliver 8-week exercise intervention, *Warrior FIT intervention* with 45-minute exercise sessions will be via Telehealth

Theoretical Framework

- Exercise has traditionally been cautioned in SCD
- Exercise among people with SCD is complicated by evidence that disease-associated changes are related to autonomic, muscular, cardiovascular, and pulmonary dysfunction[4]
- Near Max and Very Light physical activity may lead to increased pain in youth with SCD
- Figure 2 proposes that *moderate intensity exercise*[3] will improve cardiovascular and muscle function

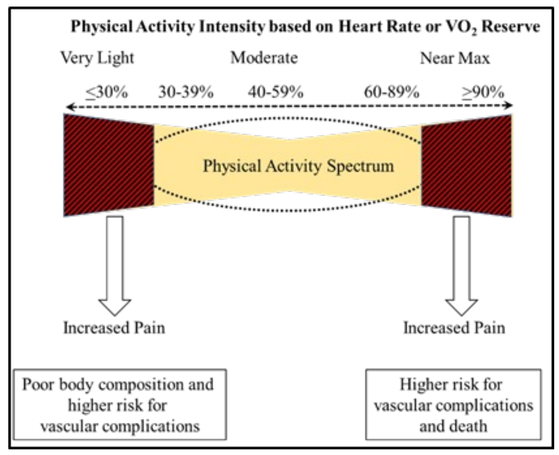

Fig. 2. Model of physical activity in SCD

Outcomes

- Recruited 10 youth-caregiver dyads in Warrior FIT intervention
- Feasibility data shows >60% completion rate for home exercise sessions, thus far
- Completed three Warrior FIT Groups with 14 children and adolescents
- Developing sustainable Peer-Support Wellness program with community
- Physical fitness measures: minimal adverse events during exercise sessions

Key Messages

- The Sickle Cell FIT program focuses on a *vulnerable population* that disproportionately affects Black Americans across the Deep South.
- The Warrior FIT intervention is tailored by people with SCD with a focus on the *reduction and prevention* of cardiometabolic risks and designed to create exercise programming tailored to overcome barriers to exercise in this population.

Community Impact

Key Partners:

- Sickle Cell FIT community board
- Mississippi Sickle Cell Foundation
- UMMC Pediatric SCD Clinics
- Mississippi State Department of Health
- Jackson State University (JSU) Margaret Walker Center

Community & Public Health Potential Benefits:

- Community Health Services: Potential to reduce overweight or obesity among youth with SCD in the Deep South
- Health Education Resources: Disseminate education regarding SCD and exercise tailored for people with SCD based on direct input from stakeholder partners and community
- Public Health Practices: Information learned from patients and the community regarding barriers to physical activity will guide new and existing health programs for youth with SCD

References

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