

Capstone for Impact Submission | GY2020

Project Title: Feasibility of "Couch to 5K" run training program for cardiac rehabilitation patients

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Advisor Names(s): Audrey Wu, MD

Branch: Diagnostics and Therapeutics

Path of Excellence: Ethics (this project is not intended to fulfill Path of Excellence capstone requirements)

If this project can be continued by another UMMS student, please include your contact information or any other details you would like to share here:

Summary: This project sought to determine the feasibility of implementing a “couch-to-5K” beginning run/walk program in cardiac rehabilitation patients and whether participation in such a program beneficially impacts long-term participation in physical activity in the free-living environment.

Methodology: We have obtained IRB approval (HUM00166970) and are presently recruiting cardiac rehabilitation patients who had completed phase II from Domino’s Farms Cardiology at Michigan Medicine. Upon enrollment, we will provide each participant with individualized, risk-stratified ~16-week training program designed to progressively develop sufficient cardiopulmonary fitness to complete target 5K event Big House 5K on April 19, 2020 in Ann Arbor. Training plans were developed by the study team and 3-times weekly exercise sessions will be individualized and overseen by exercise physiologists at Domino’s Farms. Participants will be provided a training log to track progress, and receive complimentary race entry fee as part of participation in program. The study team will provide education to participants throughout the training program, centered on basic information for beginning runners (e.g., footwear, apparel, nutrition, race-day logistics). The primary outcome will be the proportion of participants who successfully complete the target event. A secondary, exploratory objective is to assess maintenance of free-living physical activity for up to 12 months following participation in the program, as compared to cardiac rehabilitation patients who do not participate in the program. Participants will be asked to report physical activity once monthly, and these data will be compared to data currently being collected for cardiac rehabilitation patients at Michigan Medicine.

Results: As of the time of this submission, approximately 10 patients have provided written informed consent to participate. Exercise physiology staff will provide each participant with an individualized training plan that will commence in January 2020, and the target 5K event is scheduled for April 19, 2020.

Conclusion: Based on the number of consented participants, there appears to be interest in this program among cardiac rehabilitation patients. As of the time of this submission, there is not sufficient information to comment on training adherence nor completion of the target event. Data collection to address the primary objective of the study is ongoing and anticipated to be completed by the end of April 2020. Data regarding long-term maintenance of physical activity (exploratory aim of the project) is anticipated to continue until approximately mid-2021.

Reflection/Impact Statement:

If this study demonstrates that a beginning run/walk program can lead to successful completion of a 5K event by cardiac rehabilitation patients, these results could impact cardiac rehabilitation and other patient populations in whom it may not have been previously thought it was possible to implement a training program by providing initial evidence for such a training program as viable option for regular physical activity. Participation in this study may benefit individual patients by providing a feeling of accomplishment or empowerment, reinforcement of physical activity habits, development of cardiorespiratory fitness, and a social support network. If this initial program proves successful, there is potential to expand future projects to include multiple target events, a broader patient population, or non-running athletic events (e.g., cycling, triathlon).

After the target 5K event is over, we will work to publish our initial feasibility findings to disseminate this information to the medical community. We will work with exercise physiology and cardiology staff to ensure there is a plan in place for long-term data collection for the exploratory aim. We will also ensure that there is sufficient information in place to allow future iterations of the program.

If giving advice to another student regarding completion of a CFI project, my first advice is to be realistic about time – the latter stages of medical school can be very busy, and a project of any scope will likely take longer than one hopes/plans. I would also advise future students to avail themselves of the many helpful resources in the Michigan community and don't feel as though they have to do everything in isolation. I would advise them to take initiative to drive the project forward, but seek out and accept the help they need to ensure that it continues to progress.

Supporting documents:

1. Example Training Log
2. Beginning Runner Educational Materials