1-2020

Pilot Evaluation of the Usability and Utility of a Wearable Technology to Monitor and Evaluate Health Condition

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12 December 2019

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Introduction: Cardiac rehabilitation programs have particularly poor attrition and rehospitalization from cardiac-related events is a large burden on the medical system, as 8.9% of patients who have acute MI are rehospitalized within one year. External barriers may exist that prevent patients from adequately completing in-house cardiac rehabilitation, which makes them strong candidates for a home-based rehab program (HBCR). Previous randomized trials have generated evidence that HBCR can achieve similar cardiac improvements in 3- 12-month clinical outcomes. With the large-scale adoption of wearable technologies, with an estimated 8.2 million devices owned by individuals over 55, we have an opportunity to incorporate these wearables as a motivational tool to keep patients engaged in their rehabilitation in this more independent HBCR model.

Objective: Initial studies centered around patient perspectives and interest in wearables. We now seek to evaluate if the administration of wearables leads to reduced attrition rates in the setting of home-based rehabilitation.

Methods: This study serves as a 25-patient pilot study. Patients will be enrolled bi-weekly in a trial home-rehab program, ten per group (5 receiving the wearable via MovingAnalytics, 5 control). Following the rehab trial period, these patients' compliance and cardiac performance measurables will be collected and compared to another patient group that does not receive wearables and large-scale attrition data.

Results: To be obtained.

Discussion: We anticipate patients who receive wearables at the onset of their rehabilitation program will be more engaged in their own health maintenance and have greater compliance rates than control groups. This presumption is based off a previous attitudes study that demonstrated perceived interest in the technology amongst this patient population. This study can be expanded to evaluate the impact of providing wearable monitoring on cardiac outcomes, evaluated by standard cardiac metrics. We anticipate improved patient health outcomes with wearable administration in the home-rehab setting.