The Team

- Susan Dunn, PI, College of Nursing
- James Schafer, Co-I, Sparrow Hospital
- Timothy Foy, Co-I, Sparrow Hospital
- Rajiv Ranganathan, Co-I, College of Engineering/Department of Kinesiology
- Lorraine Robbins, Co-I, College of Nursing
- Sandi Smith, Co-I, College of Communications Arts and Sciences
- Research Assistants over the 10-month period: Amber Harper, MSN, RN (Motivational Interviewer); Jennifer Shenkosky (Motivational Interviewer); Paige Gagnon (Nursing Student Data Collector); Devynn Makidon (Nursing Student Data Collector); Lauren Pagaeu (Nursing Student Data Collector); Madison Russ (Nursing Student Data Collector)

Status of Project and Related Activities

Intervention Pilot Study

The intervention pilot study completed enrollment and follow-up with patients in February 2017. We screened 156 patients with ischemic heart disease (IHD) for hopelessness in the acute care setting at Sparrow Hospital. As expected, 56 (36%) met the hopelessness criteria. Of eligible patients, 69.8% (n= 30) enrolled and 67% (n= 20) completed the study. Patient enrollment, acceptability, and satisfaction goals were met. The intervention group had increased minutes per day of moderate to vigorous physical activity as compared to the other groups, with medium sized effects. This RCT demonstrated feasibility, acceptability, and medium sized effects, which provide the scientific premise for a larger trial. The intervention pilot enrolled 3 racial minority patients (10% of the intervention pilot’s total sample). Two of the 3 patients completed the intervention, while 1 was lost to attrition.

Descriptive Pilot Study

The descriptive pilot study had a sample size goal of 60 racial minority patients with IHD. Recruitment of racial minority patients IHD began at Sparrow Hospital in August, 2016. Our team experienced low enrollment of patients into the descriptive study due to a low number of racial minority IHD patients at Sparrow Hospital. Twenty patients were approached and 17 patients enrolled over a 10-month period. Strategies to increase enrollment over the 10-month period included:

- On-site recruitment 3 to 5 days per week
- Recruitment from 3 acute care units at Sparrow (CRU, 4-Foster, and 4-South)
• The addition of recruitment of patients from Sparrow's outpatient cardiac rehabilitation program in November 2016 (at the recommendation of Dr. Schafer and Tim Foy)
• Discussion with nurse managers in December 2016, resulting in the addition of in-person consultation with charge nurses on recruitment days to confirm that we were identifying all possible racial minority patients
• Contact made with the designated nurse manager and IRB liaison at McLaren Greater Lansing Hospital in January 2017 to investigate adding McLaren as a second enrollment site. Required paperwork was submitted to McLaren in February 2017, but our request never moved forward in the McLaren system.
• Meeting with Ms. Nancy Miller, Sparrow Director of Research in early May 2017, who confirmed that we had been accessing all possible avenues within the Sparrow Hospital system for potential racial minority cardiac patients

A progress report and proposal was sent to Dr. Shelia Cotten on May 30, 2017 stating that our team had exhausted strategies to increase enrollment into the descriptive racial minority study and that our research team could not justify spending any more CFIR funds to continue the descriptive racial minority project when it has been enrolling at such a slow pace. We received a response back from Dr. Cotten stating that she was in agreement with our proposal.

Status of Budget

A total of $13,424.56 of the CFIR award has been used, with $6,397.44 to be reverted back to the CFIR. It was determined in October 2016 that the purchase of ActiLife software was not needed for the project as the College of Nursing has a license for the software. Therefore, approval was sought to move funds designated for the software to research assistant salaries. This was approved. Please see attached Final Report of Expenditures.

Achievement of Specific Aims

#1: Describe hopelessness in racial minority patients

The small sample size (n=17) of racial minority patients limits our ability to do detailed analysis of hopelessness in this sample. However, we plan to complete subgroup analysis as part of a larger descriptive project.

#2: Evaluate the feasibility and acceptability of MTM, with and without SS

Of the 56 hopeless patients, 13 did not meet further eligibility criteria (9 did not have a cell phone or could not text, 4 could not perform PA). Of the remaining 43 patients, 30 (69.8%) enrolled in the study. Of the 30 enrolled, 20 (67%) completed the study. One patient died and 1 became ineligible due to a stroke. Other reasons given by patients for leaving the study included being too busy, being overwhelmed, or family issues. No patient reported dropping from the study due to accelerometer use and all patients used the accelerometer appropriately. There were no significant differences in age, sex, or race between patients who did versus did not meet the hopelessness criterion, were
eligible versus not eligible for other reasons, enrolled versus did not enroll, or completed versus did not complete the study.

All (100%) of the motivational interviewing sessions, 92.8% of text messages from the nurse (1 patient inadvertently gave a land line phone number), and 100% of texts from the significant other were delivered. All of the significant others asked to participate in the study agreed and 100% completed their study component. All patients reported reading 100% of the texts received and all significant others reported sending 100% of the text messages.

#3: Examine patient satisfaction with MTM, with and without SS

Patients in the two MSS groups expressed satisfaction (mean >3.0 out of 4) with the intervention components, with 86% satisfied with the motivational interviewing, 77% with the texts from the nurse, and 100% with the texts from the significant other.

#4: Evaluate preliminary efficacy of MTM, with and without SS, in improving PA

Analysis of the preliminary efficacy of the Heart Up! intervention showed an increase of 3.11±6.38 minutes/day (p=0.25; n=7) in moderate to vigorous PA for the MSS with SOS group after 8 weeks, compared to only a 0.56±1.09 minute/day increase (p=0.22; n=7) and 1.05±6.47 minute/day decrease (p=0.74; n=6) for the MSS only and AC groups, respectively. Medium sized effects (d>0.5) were identified when comparing the MSS with SOS to the other two groups.

#5: Determine preliminary efficacy, with and without SS, in decreasing hopelessness

A non-significant weak negative relationship (r=-0.19, p=0.45) was identified between change in cumulative minutes of moderate to vigorous PA and change in state hopelessness.

Barriers to Implementing Study

The research team had sought and received evidence of an ample number of racial minority IHD patients at Sparrow Hospital prior to the submission of a grant proposal to CFIR. Data provided by Sparrow Hospital staff showed that in 2015 there were 4,508 inpatient discharges by MS-DRG in Medicare Diagnosis Category 5 (Disease of the Circulatory System). A total of 15.1% in the category were of racial minority status, with the largest sub-category of race (8.1%) being black. DRGs within the category included 172 acute myocardial infarction, 45 angina or atherosclerosis, and 609 coronary artery stent. However, lack of racial minority IHD patients was the primary barrier to attaining our sample size goal. A secondary barrier was lack of responsiveness from McLaren Greater Lansing Hospital, which could have potentially served as a second recruitment site.
Presentations

PI- Abstract Submitted:


PI- Completed:


Dunn, S. L. (2016, May). The Importance of Including Hospital Inpatients in Research: Facilitators, Barriers, and Getting Involved. Sparrow Hospital/Michigan State University Center for Innovation and Research, Sparrow Hospital, Lansing, MI.


Research Assistants- Completed:


Pageau, L., Russ, M., & Dunn, S. (2017, April). Differences in Moderate to Severe Hopelessness Levels Based on Age, Race and Sex in Patients with Coronary Heart Disease. Poster presentation. Greater Lansing Community Nursing Research Day, McLaren Hospital, Lansing, MI.
Publications

PI- Submitted:


External Funding

PI- Submitted:

R01, NIH- National Institute of Nursing Research (June, 2017)