Feasibility of a Smartphone-Delivered, Hybrid Cardiac Rehabilitation Program

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Background:
• Cardiac rehabilitation (CR) is a class I recommended therapy following an acute coronary syndrome. However, participation in CR remains at 20% in the United States due to high co-pays and distance from CR programs.
• To tackle these issues, alternative, patient-centered CR programs that can fit into the lifestyles of patients are needed. Hybrid cardiac rehab programs, where part of the CR program is done at home, represent one such alternative.
• An issue with hybrid programs is - how can care teams effectively manage and coach patients at home. Digital platforms such as smartphones show promise in addressing these gaps.

Aims:
This study aimed to evaluate the feasibility of a smartphone-delivered, hybrid CR program as an alternative to traditional center-based rehab.

Methods:
• Ten patients who qualified for CR based on Medicare criteria and who could not attend three CR sessions per week were considered candidates.
• Participants were risk-stratified based on ability to exercise safely at home and interest in using a smartphone application to manage their health.
• Enrolled patients were required to attend two sessions of CR per week for the first two weeks and three sessions in the third week, after which their required attendance was reduced to one in-person visit a week.
• Participants were enrolled in a home-based program delivered through the Movn application from Moving Analytics.
• The CR staff created an individualized care plan for each participant using the Movn dashboard consisting of a home exercise prescription, educational videos and daily reminders to log vital signs and medications.
• The care plan was sent to the patient’s app and was converted into daily checklist.

Device Usage:
Four patients were loaned a Fitbit Charge HR to track their exercises. Three patients received an Omron blood pressure cuff. One patient chose a Samsung tablet. All patients returned the loaned devices at the end of the study.

Staff Time:
CR staff spent an average of one hour per patient per week to monitor patients. Staff resolved 22 symptom-related alerts based on data reported from the mobile application. A total of 189 and 113 messages were sent by nurses and patients respectively during the study.

ED Visits:
No ED visits were reported.

Aims:
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Conclusions:
• This study shows the feasibility of using hybrid cardiac rehab programs to serve additional patients and address issues related to cost and convenience.
• The study demonstrated improved clinical outcomes (78% improvement in functional capacity and QOL measures) despite lower center-based visits (20 versus the standard 36).
• This program is potentially suited for low-moderate risk patients who need to return to work or have limited transportation options.

Future Work:
Further work is needed to translate the outcomes of this study to a long-term financially sustainable model for the hospital. Lourdes is exploring cash-based and other reimbursement mechanisms to support further expansion.

Disclosures:
None