

SharedHeart: a digital shared decision making approach to increase physical activity levels of patients with coronary artery disease

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BACKGROUND: Physical activity is a key component of cardiac rehabilitation. Achieving long-term behaviour change for physical activity is challenging. The majority of coronary artery disease (CAD) patients do not reach the recommended minimum physical activity level at long-term follow-up. They experience difficulties interpreting exercise targets and monitoring their physical activity. To bring the newly formed habits from the supervised rehabilitation to the home environment, we propose to use a shared decision making approach (SDM) that includes the patient's preferences, next to clinical evidence and expert opinions.

PURPOSE: We propose an approach and supporting digital tools to assist physiotherapists and patients for SDM when building an exercise program during supervised rehabilitation. The ultimate goal is to have a positive long-lasting effect on patients' lifestyle reducing their CVD risk.

METHODS: Cardiac rehabilitation is a multidisciplinary field involving many stakeholders, including patients and varying caregivers (e.g. cardiologists, physiotherapists, dieticians). To incorporate all these perspectives, we followed a multidisciplinary, user-centred approach to design digital tools. By iteratively designing and gathering patient and caregiver perspectives in meetings and workshops, we strive to detect usability issues early in the process and ensure a good fit in clinical practice.

RESULTS: We developed the SharedHeart approach consisting of three applications to support physiotherapists in involving their patients in SDM for physical activity. Before their first SDM encounter, patients use the IPrefer tablet application to indicate their preferences for physical activity. During the encounter, the physiotherapist and patient collaboratively construct an exercise program. The SharedHeart web application supports them in the discussion by offering suggestions of activities and demonstrating how they fit with the patient's preferences and exercise guidelines. This application allows physiotherapists to remotely monitor their patients. Between the sessions, patients follow up on their physical activity with the SharedHeart mobile app. In the next SDM encounter, the patient and physiotherapist discuss the patient's adherence to the exercise program and update the program accordingly with the web application. This process repeats until the end of the supervised rehabilitation, when the most suitable exercise program for the patient has been found, and can be used by the patient at home.

CONCLUSION: We designed and propose SharedHeart, a SDM approach supported by three applications to actively involve patients in the decision making process for physical activity to reduce their CVD risk. To verify the effectiveness of our approach, we start a RCT in which we investigate changes in CAD patients' quality of life, exercise capacity, motivation to exercise, perception of rehabilitation and engagement in the decision making process.

Preparation



IPrefer tablet application



Exercise guidelines

Shared decision making consultation



SharedHeart web application

Remote follow-up



SharedHeart mobile app



SharedHeart web application

