

USING MHEALTH APP TO SUPPORT TKR DECISION MAKING FOR KNEE ARTHRITIS PATIENTS

Hua Zheng, PhD¹, Bengisu Tulu, PhD², Wonchan Choi, PhD², Patricia Franklin, MD, MBA, MPH¹

¹University of Massachusetts Medical School; ²Worcester Polytechnic Institute, Worcester, MA

Introduction: Mobile health (mHealth) technology can be used to integrate into medical decision making for patients with advanced knee arthritis. We explored patient preferences on content and design of a mobile health app to facilitate daily symptom capture and summary feedback reporting, in order to inform treatment decisions, including use of total knee replacement surgery (TKR).

Methods: We developed an Android-based smart phone app for knee arthritis patients to assess arthritis symptoms and individual readiness for TKR surgery. Patient focus groups were conducted to gather requirements for mHealth app development and to refine the design and content of the app. Clinician (physical therapist, surgeon) interviews were conducted to understand clinician expectations from the summary trend report generated by the app.

Results: Sixteen patients attended focus groups with an average age of 67 and 63% female, and three clinicians participated in clinician interviews. The preliminary findings revealed that the patients preferred easy tap user interfaces to multi-tap or slider methods, and vertical question layout to horizontal orientation. Patients liked to be engaged by progress feedback reports and educational tips. Both patients and clinicians found a trended outcome summary report helpful which provides more precise details on whether and how the symptoms are changing over time.

Discussion: User input can inform the design and implementation of mHealth technology to deliver tailored knowledge to patients through a user-defined, patient-centered smart phone app. The tool will support future knee arthritis patient decisions regarding the need for, and timing of TKR surgery.

Contact:

Hua Zheng, PhD

Department of Orthopedics and Physical Rehabilitation

University of Massachusetts Medical School

Hua.Zheng@umassmed.edu