UFHCC Research Day 2017 | Abstract Template

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UFHealth
CANCER CENTER

LIST ALL AUTHORS and AFFILIATIONS – _underline presenting author_

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TITLE

Applying User-Centered Design Principles to the Development of a Colon Cancer Screening mHealth App

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HYPOTHESIS:

Research Aims: The goal of this project is to document the development of a mobile health (mHealth) app for colorectal cancer (CRC) screening and explore how teams from different disciplines (communications, computer science, medicine) as well as community involvement contributed to the creation of an app that is credible, usable, effective, and accessible for its target audience.

RA1: Describe how the principles of user-centered design (UCD) were present during the design of a mHealth application for colon cancer screening. **RA2:** Describe how each of the three contributing fields—medicine, computer science, and communications—and the community outreach program contributed to the overall credibility, usability, effectiveness, and accessibility of the virtual human (VH) mHealth application.

BACKGROUND/AIMS:

To increase CRC screening with fecal immunochemical tests (FIT), the STEM Translational Communication Center (STCC) in the College of Journalism and Communications (CJC) at the University of Florida (UF) was awarded R01 grant from the National Institutes of Health. The project aims to develop an mHealth app which will increase the use FIT testing of by adults aged 50 and over to screen for CRC. The app uses virtual human technology (VHT) to let patients visit with a virtual healthcare provider to receive tailored information about CRC screening. Tailoring information makes it more relevant to patients and the use of VHT helps reduce embarrassment in discussing stool collection. Additionally, VHT allows for patients to be demographically matched with their VH provider. Demographic discordance between patients and providers reduces overall quality of healthcare.

Researchers across multiple departments at UF and the University of North Carolina (UNC), representing three core fields—medicine, communications, and computer science—were part of the team designing and building the application. The application will be tested using a fractional factorial design in a clinical setting in 2018 to establish its effectiveness at changing the CRC screening behaviors of patients. The present paper looks to document the development of this app from a user-centered design perspective, exploring the ways in which community feedback increased the overall utility of the app. It also aims to establish the ways in which having multiple fields offer perspectives during the development of the app contributed to its credibility, usability, effectiveness, and accessibility.

METHODS:

This paper presents a case study in the development of an mHealth app designed to encourage older patients (50+) to request regular colon cancer screening from their physician. It uses participant observation to describe the process by which the app was developed using UCD principles. The first phase of the design process (investigation of needs) was launched in January 2017 and consisted of eight focus groups in addition to app development processes. The second phase (prototype development) was launched in June 2017 and is currently ongoing. It consists of sixteen focus groups testing the prototype of the app and work on the integration of the app into the UF Health Network. The final phase (clinical implementation) will begin in 2018. The case study presents information about the development of the app thus far gathered through participant observation and interviews with the co-investigators, as well as document analysis.

RESULTS & CONCLUSIONS

Cross-disciplinary teams collaborated in three phases of development for the mHealth app: investigating needs, prototype design, and clinical implementation. The principles of user-centered design were woven throughout the project development, with researchers collecting feedback from patients and providers at all stages and using that feedback to improve the credibility, usability, effectiveness, and accessibility of the mHealth app. The app is being designed using an iterative process, which encourages feedback and improvement of the app and allows teams from different fields to revisit topics and troubleshoot problems collectively. Such a process contributes to an app which not only reflects cross-disciplinary expertise but reflects the needs, wants, and concerns of patients.