Background and Relevance

Mobile Health Technology (mHealth) uses mobile devices such as smartphones, health apps, and other wireless technology to support health. Research studies show that mHealth can promote healthcare engagement, including physical activity and improve 6-month smoking cessation. Positive impact on chronic disease management is also evident with reports of reductions in blood glucose, improved cardiovascular outcomes and reductions in depressive symptomology.

Low-resourced communities are likely to present with chronic diseases. Though digital healthcare management can be valuable, few studies have investigated low-resourced patients’ mHealth practices, and the perceptions of their healthcare providers about the value of digital healthcare management in patient support to ascertain best practices for deploying mHealth strategies for health promotion in this community.

Objective

This quantitative and qualitative study evaluated community health center (CHC) patients’ mHealth practices, and healthcare providers’ (HCPs) perceptions about the value of digital healthcare technology in mobile care delivery.

Questions guiding the research were: (1) To what extent do safety-net patients use mHealth tools for healthcare management? (2) What are healthcare providers’ perceptions of the value of mHealth tools for patient care?

Approach

Research Methods

A multidisciplinary team of psychologists and healthcare specialists designed the study. Researchers partnered with HealthPoint Community Health Centers, a community-supported health system in Western Washington that offers comprehensive health services to low-resourced patients.

Implementation Methods:

Patient Data: N=103 patients accessing healthcare at HealthPoint Community Health Centers were approached in waiting areas. Eligible respondents: 18+ years of age; owned or had access to a smartphone; and speak and read English. Respondents completed a 47-item questionnaire which queried about mobile technology practices. Patients received a $10 gift certificate for participation. Data were analyzed using STATA/IC Version 14.2 (StataCorp LLC, College Station, TX).

Healthcare Provider Data: Participants were healthcare providers – GPs, medical assistants, behavioral health specialists, and nurses. Respondents participated in two 60-minute focus group sessions (12 respondents each) and offered $75 gift certificates. Responses were audiorecorded and transcribed for analysis. Codewords (words used more than 2x in a narrative) were identified and recorded on three trials. Codewords with similar information were grouped into clusters and themes derived based on a single idea.

Results (Patient Data)

Table 1: How Mobile Technology Can Improve Patient Care

<table>
<thead>
<tr>
<th>Theme</th>
<th>Healthcare Provider Quotes for Overarching Theme</th>
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| Safety & Support | Ever use smartphones for wellness? = 83%  
|         | Ever use mobile-based apps? = 54%  
|         | Frequency of using smartphones for health? Weekly = 47%  
|         | Types of health apps owned  
|         | Calorie count = 38%  
|         | Step count = 28%  
|         | * Types of medical apps used  
|         | Prescription refill = 56%  
|         | Medication reminder = 34%  

* Indicates combined data results from bioccausal areas

Table 2: Role of Technology in Increasing Access for Diverse Communities

<table>
<thead>
<tr>
<th>Theme</th>
<th>Healthcare Provider Quotes for Overarching Theme</th>
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| Security-based apps | Apps that are easy to use  
|         | “In addition to visuals and voices, very simplistic texts that you’re walking them through”  
|         | “To do a patient interaction and have them walk it through their daily life and health issues is really useful when you think about expanding”  
|         | “I think that if we are going to use the apps and mobile devices, then we are going to have to keep lots of patients and just walk back and forth and people will get accustomed to it. But then if we bombard them with the information that we need, you know, with a higher education level, they lose interest.”

Conclusions

Safety-net patients are using mobile health devices for self-care management.

Healthcare providers’ perceptions about the role of technology in healthcare delivery reveal:

- Mobile health technology can improve data accuracy via daily updates to patient records.
- Mobile health technology can support positive health outcomes by providing reminders for appointments and medication adherence.
- Mobile health technology can improve provider-patient communication.

Healthcare providers’ perceptions about the importance of using mobile health devices to increase healthcare access to ethnically diverse and underserved communities reveal:

- Mobile health technology can improve patient-provider relationships by creating apps that patients can use before hospital visits with the opportunity to disclose personal information ahead of the visit.
- Mobile health technology can improve patient-provider relationships by including motivational content in the health apps.

HCPs perceive the importance of creating easy-to-use health-based mobile applications to engage ethnically diverse and underserved communities:

- Health apps that are easily navigated and with visuals.
- Health apps with checklists and tabs to show task completion, or pages viewed.

Healthcare providers perceive the importance of securing patient health information.

- They emphasize confidentiality and patient privacy.