

Healthcare Professionals' Perspectives on the Opportunities for Mobile Health Technologies to Support (Safety-Net) Patients' Healthcare Needs

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Background



- > Studies demonstrate that mobile health technologies (smartphones, health apps, sensors) can effectively promote health and wellness¹⁻⁴
- > Recent studies show that low-resourced communities are aware of and use mobile health tools like health-based apps to manage healthcare, with up to one-third reporting that they use preventive care health apps such as step-counters⁵
- > Although low-resourced patients use mobile health tools, healthcare professionals (HCPs) remain hesitant about digital healthcare technology to support patient healthcare management⁶⁻⁷

Objectives

- > Investigate HCPs perception of the value of mobile healthcare tools to promote health and wellness among low-resourced, safety-net communities
- > Solicit insights on strategies to encourage use in healthcare delivery

Three topics were investigated using a focus group format:

- Role of technology in helping to increase access for diverse and underserved patient populations
- Barriers to incorporating mobile health information into existing workflow
- Support needed for HCPs to work with digitally-engaged safety-net patients



Methods

Methods



- > Healthcare professionals (HCPs) practicing in traditional and non-traditional safety-net healthcare systems
 - DO, GPs, Medical Assistants, Behavioral Health Specialists, Nurses, Community Health Workers, Prevention Specialists, Community Support Specialists, and Social Workers
- > Recruited from community health centers in Washington state and Washington DC
- > Four 60-minute focus group interviews (two at each geographic location) were conducted
- > A total of 35 HCPs (22 in Washington state and 13 in Washington DC)

Methods



- > Respondents offered \$75 gift certificates for participation
- > Interviews were audiotaped and later 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/concepts derived based on a single idea

Methods

Table 1: Research Concepts and Questions

Research Concept	Question/probes
Barriers to using mHealth-based information	<p>Are there barriers to incorporating patient health information from mobile health devices into existing workflow?</p> <ul style="list-style-type: none">• (Probe): What are the barriers to accurately gathering patient health status information?
Support to incorporate mobile technologies into patient care	<p>What type of information would you need to incorporate mobile health technologies into your patient care management?</p>
How might mobile health technology increase healthcare access for diverse and minority populations?	<p>What role can technology play to increase diverse patients' access to healthcare?</p> <ul style="list-style-type: none">• (Probe): How can mobile health technology help to increase healthcare delivery for diverse patients?



Results

Results

Table 2: Demographic and Occupational Characteristics of Focus Group Respondents

FG Respondent Characteristics, n (%)	Total group (N=35)	Washington, DC		Washington State	
		Group 1 (n=7)	Group 2 (n=6)	Group 1 (n=14)	Group 2 (n=8)
Gender, n (%)					
Women	32 (91.4)	6 (85.7)	6 (100)	12 (85.7)	8 (100)
Men	3 (8.6)	1 (14.3)	0	2 (14.3)	0
Occupation, n (%)					
Community support specialist	1 (2.9)	1(14.3)	0		
Care director	1 (2.9)	1(14.3)	0		
Community health worker	3 (8.6)	3(42.9)	0		
Prevention coordinator	1 (2.9)	1 (14.3)	0		
HIV tester	1 (2.9)	1(14.3)	0		
Nurse	12 (34.3)	0	6 (100)	4 (28.6)	2 (25.0)
Medical doctor	4 (11.4)			2 (14.3)	2 (25.0)
Medical assistant	8 (22.8)			5 (35.8)	3 (37.5)
Doctor of Osteopathic Medicine	1 (2.9)			1 (7.1)	0
Behavioral health specialist	2 (5.7)			1 (7.1)	1 (12.5)
Clinical social worker	1 (2.9)			1 (7.1)	0
Race, n (%)					
White	20 (57.14)	0	0	12 (85.7)	8 (100)
Black or African American	12 (34.3)	6 (85.7)	6 (100)	0	0
Other (not specified)	3 (8.6)	1(14.3)	0	2 (14.3)	0

Results

Demographic Characteristics

- > FGs were completed by 35 healthcare professionals
 - ❑ 22 in Washington State
 - ❑ 13 in Washington DC

- > Predominant demographic characteristics of professionals:
 - ❑ Women (91%);
 - ❑ White (57%)
 - ❑ African-American (34%)

- > Majority of respondents were frontline workers:
 - ❑ Nurses (34%)
 - ❑ Medical Assistants (23%)

Results

Qualitative Findings - Access to Diverse Patients

Q1: What role can mobile technology play in increasing access to healthcare among diverse patients'?

HCPs identified the importance of:

- (1) Easy to use and navigate mobile technology
- (2) Content and features of mobile devices that help to build patient-HCPs' relationships
- (3) Content of mobile devices (apps) that helps to identify community-level support for low-resourced communities

Results

Qualitative Findings - Access to Diverse Patients

Theme #1: Easy to use and navigate mobile technology

> Subtheme A: Simple devices can support patient engagement in-between visits

"...there could be a checkbox, and so next time they make an appointment this alert could pop up or something of a thought they were having about their health"

> Subtheme B: Simple devices can provide support during patient visits

"...again, if the app is very simple, I mean you could just show them. This is what it looks like, and this is what it does, and this is how it can help, you know.."

Results

Qualitative Findings - Access to Diverse Patients

Theme #2: Content and features of mobile devices that help to build patient-HCPs' relationships

> Subtheme: Build patient-HCPs' rapport

"... again, just having that conversation and rapport and that dual goal-setting of building those goals together and how can things work with your goals."

Results

Qualitative Findings - Access to Diverse Patients

Theme #3: Content of mobile devices (apps) that helps identify community-level support for low-resourced communities

> Subtheme – Social Determinants of Health Support

“... how are you doing now? Did you take care of these? It has little boxes that you'd check to say that we took care of those needs. Now we have got some more needs, you know, and so you could see definitely a progression towards some of those life things they need like food, housing and things like that...”

“...I think that there are all sorts of opportunities for us to engage the community and link people to care, but we have to know where to send folks and what is appropriate for them...”

Results

Qualitative Findings - Barriers

Q#2: What do you see as potential barriers to incorporating patient health information obtained from mobile devices into your existing workflow?

- > The perceived barriers identified by HCPs were:
 - Cost
 - Inadequate time and resource
 - Problem with interoperability
 - Data security

Results

Qualitative Findings - Barriers

Theme #1: Cost

> ***Affordability of apps by patients***

“The other one is the finances. They are expensive. I know that most of the patients will say, ‘Oh, it’s very expensive and my insurance won’t cover it, you know?’ Some of the devices can’t be covered by insurance like the glucometer.”

“I have clients that don’t answer the phone due to not having enough minutes...”

Results

Qualitative Findings - Barriers

Theme #2: Inadequate Time and Resource

> **Subtheme A: Time to integrate data**

"...so then however long it would take to bring in that data or I guess I'm picturing some kind of data to link it to their medical chart so that we could have it in there. That would take some time, or some way for them to report it to us would take time out of the visit itself."

> **Subtheme B: Physical support/resource**

"...is this something that if you were in a position to provide that level of support, would you be in a position? Would you have the bandwidth to help them figure out how to use it?"

Results

Qualitative Findings - Barriers

Theme #3: Problems with Interoperability

> **Subtheme: Interoperability**

“Yes, in an ideal world it would be really nice to have this kind of comprehensive health app that communicates with our medical record and it helps us meet criteria for patient-centered medical home (PCMH) so that there are not fifteen (15) different steps that we have to do in diabetes management and selfcare goals.”

Results

Qualitative Findings - Barriers

Theme #4: Data Security

> Subtheme: Culturally-Related Security

"...otherwise, yes, we would have to learn about cultural beliefs around sharing this information with their provider around whether it's wearing it or typing it into their phones, if that's respectful to them and their culture, too."

Results

Qualitative Findings – Clinician Support

- > **Q3: If you were to have a clinical practice guide to work with patients who are digitally-engaged and who use mobile-based sources for health promotion, what type of information would you need to provide guidance to your patients?**
- > To support work with digitally-engaged patients using mobile technology for self-care management, HCPs identified the importance of:
 - Availability of standardized and evidenced-based information to reference

Results

Qualitative Findings – Clinician Support

Theme #1: Evidenced-Based Information

“...I would feel much more comfortable if we are on the same page, because then I don’t have to debunk ten different resources.”

“...I would want a list of the names of the actual apps that are good; that are evidence-based and what they’re good for. This app is good for checking your blood pressure, or this app is good for improving your diabetes control. Things like that.”

“...One of the things that it seems that we would have to do is [say] okay, the patient has the information. They got the information and so it goes back to how do we counsel the patient on the information they’ve just received? In my case, most of the time I just want raw data.”



Discussion

Discussion

Healthcare Professionals (HCPs) in safety-net facilities perceive value to low-resourced patients using mobile health technology to promote healthcare needs

They perceive mobile health technology to potentially benefit diverse patient populations if the technology has certain features:

- Mobile applications must be simple and easy to use
- Design features that can promote patient-provider engagement
- Provide access to environmentally and socially-relevant information targeting social determinants of health factors

Discussion

HCPs' optimism is tempered by perceived barriers to incorporating data from digital healthcare tools into existing healthcare practices and such barriers include:

- Cost
- Institutional and healthcare system-level barriers such as lack of time and interoperability
- Patient-level barriers such as cultural beliefs

Discussion

To support incorporating digital health data into their healthcare practices, HCPs would benefit from a clinical practice guide that:

- Is a resource for evidence-based mobile devices that can be recommended to patients

Some take-aways...

- ❑ Developers should engage culturally and ethnically diverse patients in app development as well as their care providers. Considerations:
 - ❑ Simple device permitting ease of navigation across pages
 - ❑ Consider incorporating goal-setting strategies
 - ❑ Include resource targeting SDOH factors
 - ❑ Consider culture-specific content to support HCPs working with diverse patient populations and thus facilitate rapport building
- ❑ A clinical practice guide that outlines evidence-based apps proven effective in health promotion and disease management can support HCPs' engagement
- ❑ Make data received interoperable with existing technologies used by HCPs



Thank you!



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