Usefulness of Bring Your Own Device (BYOD) Technology to Gain Insight for Patient Engagement in a Rural Health Care Setting

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Background and Significance of the Problem

BYOD (Bring your Own Device) is a mHealth delivery strategy for patients to utilize their own mobile devices for dissemination of health information and to provide patient derived data that is real-time and real world that may lead to a greater sustainable practice of self-care.

Project Aim

To elicit feedback and gain insight from a broad population of consumers of healthcare on the capability, acceptance, and perceived ease of use of BYOD text messaging mHealth technology for patient engagement for the improvement and transformation of health care.

Research Methodology

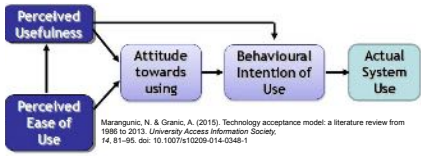
Target Population: Consumers of Rural Health Care System with access to personal smart phone

1. Vivify Health, Inc. remote patient monitoring system (RPMS) care platform was adapted for the BYOD project Customized surveys were created to meet study aims
2. Participant enrolled in BYOD system from personal cell phone. Text sent with PIN, description of project and End User License Agreement for consent
3. If participant agreed, first set of survey questions deployed
4. 2nd and 3rd round of survey questions delivered to participants via texts at time of day of their choice
5. Survey topics:
   - **Demographic Characteristics**
   - **Healthcare tolerability questions**
   - **PAM and SUS instruments**
6. Education Tips deployed at end of each survey
7. No Personal Health Information collected
8. Participation completed after submission of 3rd survey

Research Framework

Patient-centered Care Model (PCC)

Technology Acceptance Model (TAM)



Marangunic, N. & Granic, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *University Access Information Society*, 14, 81–95. doi: 10.1007/s10209-014-0348-1

Research Instruments

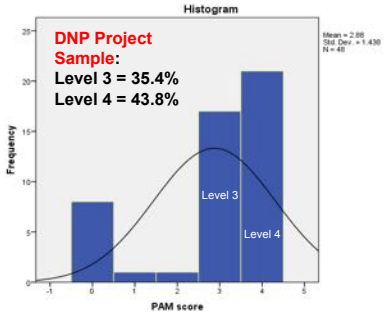
PAM: Patient Activation Measure: 10 item survey to gauge patient engagement

SUS: System Usability survey: 10 item survey to evaluate user technology acceptance and usability

Custom surveys devised specific to DNP project

Results

PAM Levels 3 & 4 indicate higher health activation attitudes and behaviors



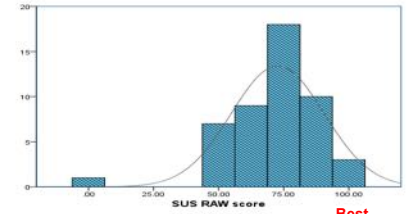
Results

	% AGREE
Prior Technology Use and Acceptance	
Use of Health Applications on phone	43.8%
Daily: 22.9%/Often:12.5%/ Rarely: 8.3%	
Routine use of Health Websites on Internet	52.1%
Willingness to Share Information over Smartphone	
Willing to Share Information with HC Provider	
Basic Information: BP/Weight	91.7%
Monthly: 50%/Weekly: 31.3%/ Daily: 10.4%	
More sensitive info as alcohol/tobacco Use:	89.6%
More willing to ask for info via app on phone than call HC Provider/Info on *Health screening*:	83.3%
Willing to use App to share information with family member or close friend (weight or BP) :	45.8%
Willing to share over cell phone:	
Level of pain:	79.2%
Pictures of rash or swollen area, etc.	93.8%
Receive instructions pre/post procedure	91.7%
Security Concerns with BYOD Technology	
Worried about sending info about health by text: NO:	77.1%
Worried that someone else would use cell phone to send incorrect info: NO:	77.1%

Results

System Usability Score (SUS): Median = 75

Scores> 68 in the SUS indicate higher perceived



Conclusions

- BYOD technology appears to be *feasible and appropriate* for those consumers who are more highly engaged in their own healthcare.
- Patients appear willing to share all types of PGHI with HC providers via BYOD technology and *do not have overwhelming security fears*
- *Certain mHealth applications* may be more acceptable and therefore more readily adopted
- *Consumers should be a part of designing* their own strategies for engagement and self-care management.

Implications for Practice

- The large disparity between the number of consumers who were invited to participate and the final sample size may be an indicator of community consumer viability for this BYOD technology strategy.
- Recommendation to implement BYOD technology for consumers who indicate interest. Plan to develop resources to provide other methods of support and encouragement of healthcare behaviors and self advocacy to less engaged consumers.