Communication - Management - Governance Developing health information solutions

S.E. LEVKOFF, H. CHEN, P. WEITZMAN. Evidence-based framework for developing health information technology (HIT) solutions for ethnically diverse populations. Gerontechnology 2016:15(suppl):45s; doi:10.4017/qt.2016.15.s.749.00 Purpose Despite the emergence of health information technology (HIT), and its evidence in supporting a variety of health outcomes, there has been less penetration of HIT in ethnic minority populations, where cultural values may play a role in moderating access. We provide an overview of a framework for the development of culturally-sensitive HIT interventions for ethnic minority older adults. Method Informed by Behavioral Change Theories with Technology Acceptance Models that are most likely to explain desired outcomes, we follow a series of research steps for HIT development (Figure 1) by collecting qualitative and quantitative data necessary for evaluating usability. feasibility, and effectiveness of the HIT intervention for ethnically diverse older adults. Cultural sensitivity of the HIT product is ensured throughout the research process, from forming multicultural / multidisciplinary research teams, engaging in dialogue with target audience, to testing implementation strategies in ethnically diverse user communities. Results & Discussion Applying this framework, four studies were conducted, including: an HIV/STD prevention website for ethnically diverse, high-risk older women; an education and training online intervention for ethnic Chinese dementia caregivers; a text messaging intervention for medication adherence in HIV+ older African Americans; and a self-monitoring system for older African Americans with congestive heart failure.

References

- Marangunić N, Granić A. Technology acceptance model: a literature review from 1986 to 2013. Universal Access in the Information Society 2015;14(1):81-95; doi:10.1007/s10209-014-0348-1
- 2.Kwasnicka D, Dombrowski SU, White M, Sniehotta F. Theoretical explanations for maintenance of behaviour change: a systematic review of behaviour theories. Health Psychology Review 2016;10(3):277-296;; doi:10.1080/17437199.2016.1151372

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Behavioral Change Theories:

(e.g., Social-Cognitive Theory, Positive Psychology, Behavioral Economics)

<u>Key concepts</u>: Cognitive and behavioral change; Motivation mechanisms such as self-efficacy and observational learning.



Technology Acceptance Models: (e.g., Diffusion of Innovation Theory, Technology Acceptance Theory)

<u>Key concepts</u>: Perceived needs and benefits; perceived ease of use; subjective social norm.

Basic Steps of Technology Research Development:

- Convene multicultural, multidisciplinary team, including members familiar with the culture of end users
- Choose behavioral theories most likely to explain desired outcomes, including mediating and moderating factors
- Use qualitative methods (e.g., formative focus groups, informant interviews) with end users about perceived need for technology, perceived benefits and barriers to adoption, and facilitators to overcome barriers to behavioral change
- Work with technology development team to translate end user data into product design for the health intervention
- Conduct iterative testing of usability and feasibility, involving back and forth with technology developers and end users towards refinement of the technology prototype
- Evaluate effectiveness of the intervention on desired outcomes through clinical trial, with process evaluation to assess fidelity of implementation in real-world clinical and social settings
- 7. Conduct multisite scale-up study to evaluate strategies for

Figure 1. Framework for developing health information technology solutions for ethnically diverse older adults as informed by Behavioral Change Theories and Technology Acceptance Models