



# Developing Smart Environments for Individuals with Chronic Illness

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## BACKGROUND

Smart environments, homes that use technology to be actively prosthetic, may be an option to help older adults stay in the residence of their choice.

## PURPOSE

To answer the question “How have older adults preferences been used in the development of smart home technologies to support aging in place?”

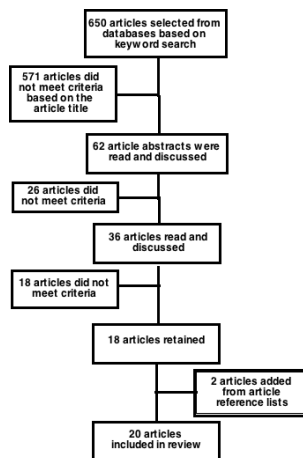
## METHODS

- ❖ Integrated Review using the Matrix method (Garrard, 2011)
- ❖ Databases in healthcare, science, and engineering including:
  - ❖ PubMed
  - ❖ CINAH
  - ❖ Engineering Village
  - ❖ ISI Web of Knowledge
  - ❖ Articles written 1990 - 2012
- ❖ Keywords
  - ❖ Older adults
  - ❖ Technology
  - ❖ Function

## FINDINGS

- ❖ Research teams: computer scientists, nurses, social workers, psychologists, physicians, engineers, and others.
- ❖ The majority of older participants were not using smart technology

## SEARCH PATH



## PREFERENCES

- Older adults expected to be active participants in the design and implementation of the smart environment in which they would live. This data was largely collected in focus groups
- ❖ The older adults wanted to share decisions regarding, “when they are being monitored and who to share data with”
  - ❖ The higher functioning the individual, the more obscured the older adults preferred the video picture
  - ❖ For individuals with lower function, video pictures could be more clear

## SYSTEM DESIGN

- ❖ Older adults are willing to use smart technology if it improves safety and ind., is user friendly, and not cost prohibitive.
- ❖ The less intrusive and more reliable the technology the more likely it is to be well received.
- ❖ Some participants were concerned that reliance on technology would limit their function by relying on the technology to do things they would otherwise do for themselves.
- ❖ The majority of older adult participants across studies were not using smart technology at the time they participated in the research.

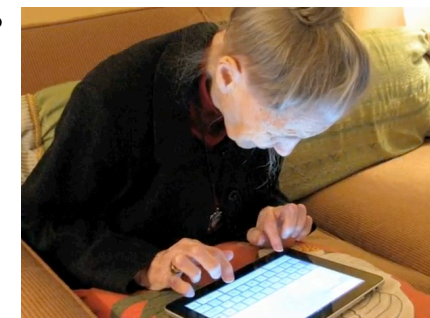
## DISCUSSION

- ❖ The largest number of reported studies is focused on preferences of potential users.
- ❖ Older adults are willing to incorporate smart technology into their lives providing:
  - ❖ the equipment is reliable
  - ❖ not intrusive
  - ❖ they have control over their own information
  - ❖ there is adequate support for learning how to use the information.

## CONCLUSIONS

Smart environments have the potential to provide support for older adults to:

- ❖ maintain active lives in which they are socially and cognitively engaged
- ❖ providing relevant and timely information to caregivers and health care providers to support aging in place.



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## REFERENCE

Jacelon, CS & Hanson, A (2013). Elder’s participation in the development of smart environments: An integrated review of the literature. *Geriatric Nursing*: 34(2) 116-122.