Inclusive AI Design

Ensuring Technology Benefits Older Populations

Bunmi Ogungbe, PhD, MPH, RN
Assistant Professor

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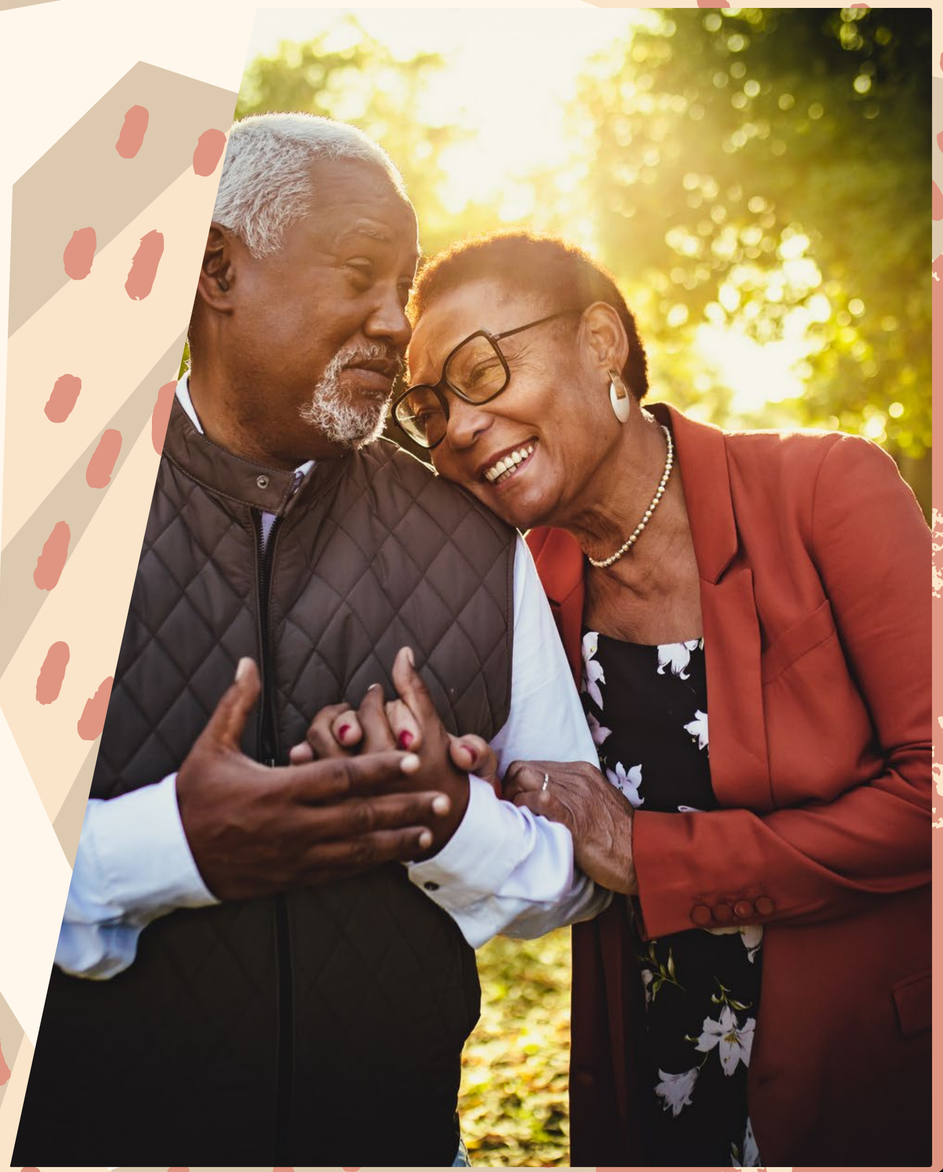


Disclosures

- National Institute of Aging - Stanford

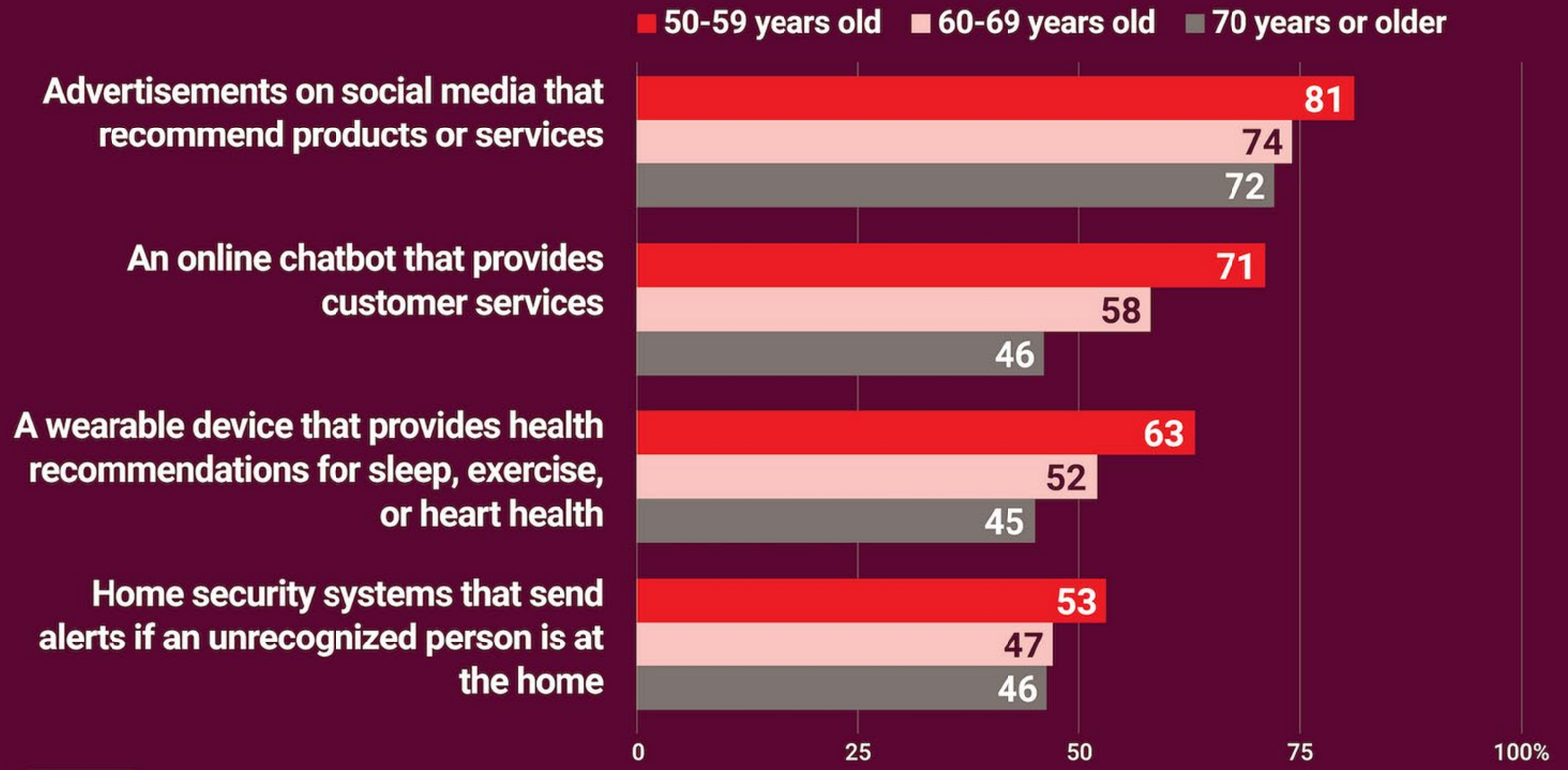
  L.E.A.R.N Center

- American Heart Association

- Founder, Leira Health

Adults ages 50 to 59 are more likely to encounter online chatbots or wearable devices than those ages 60 and older.

Percent of adults age 50 and older who have encountered each of the following technologies



50+ FastTrack

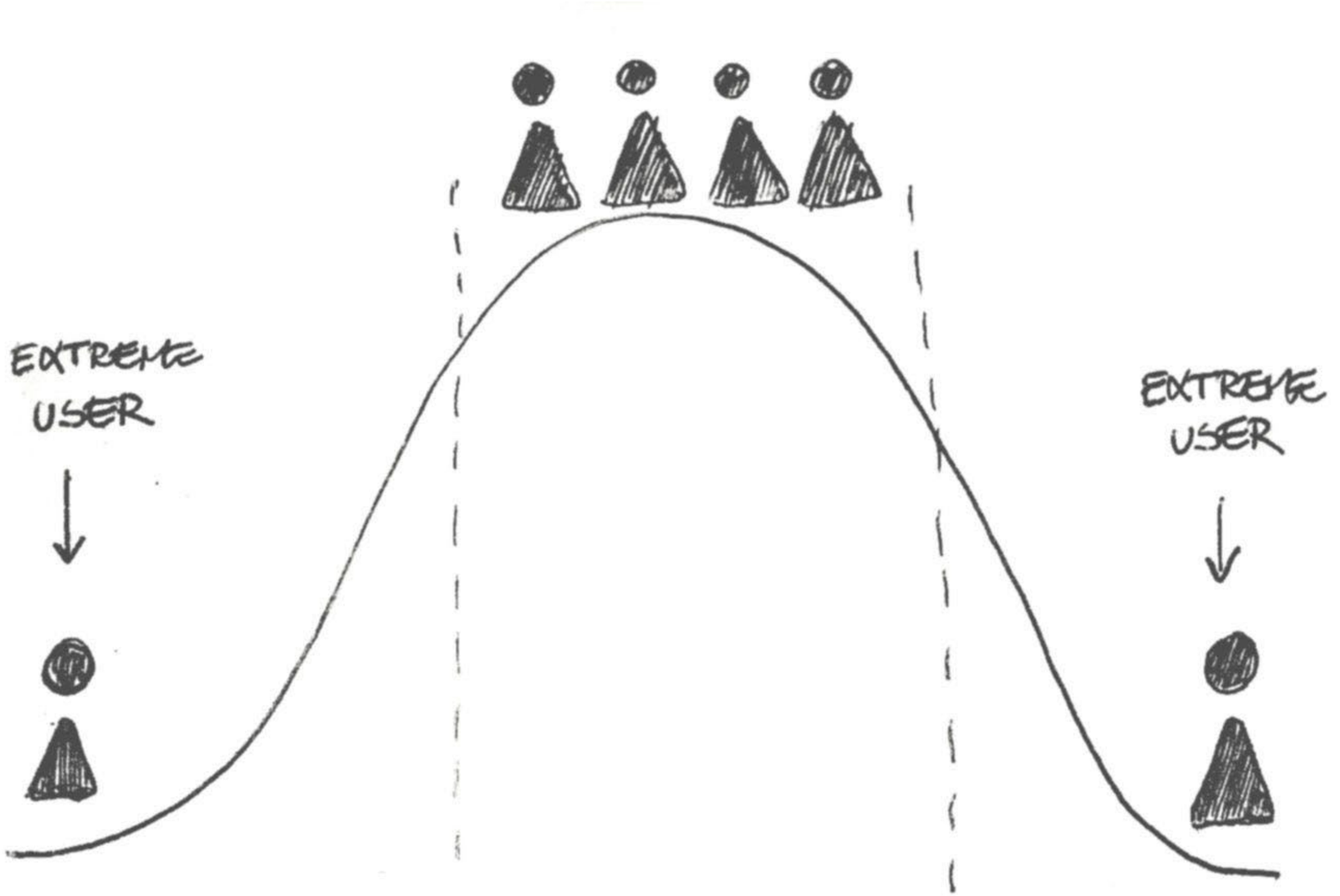
Question: Have you ever encountered the following types of technologies, or not?

Source: Foresight 50+ poll conducted August 17-21, 2023 with 1,128 adults nationwide.

Sources

https://www.norc.org/research/library/older-adults-express-mixed-views-artificial-intelligence.html

Average User --- Edge user



Sources

Imrie R. et al 2003. https://doi.org/10.4324/9780203362501

Baibaei M. & Majoobnia M. 2025. https://medium.com/@moisenm/designing-for-everyone-the-imperative-of-inclusive-ai-in-the-era-of-gpt-51e82d32276c

Universal and Inclusive Designs

Universal ‘AI’ Design

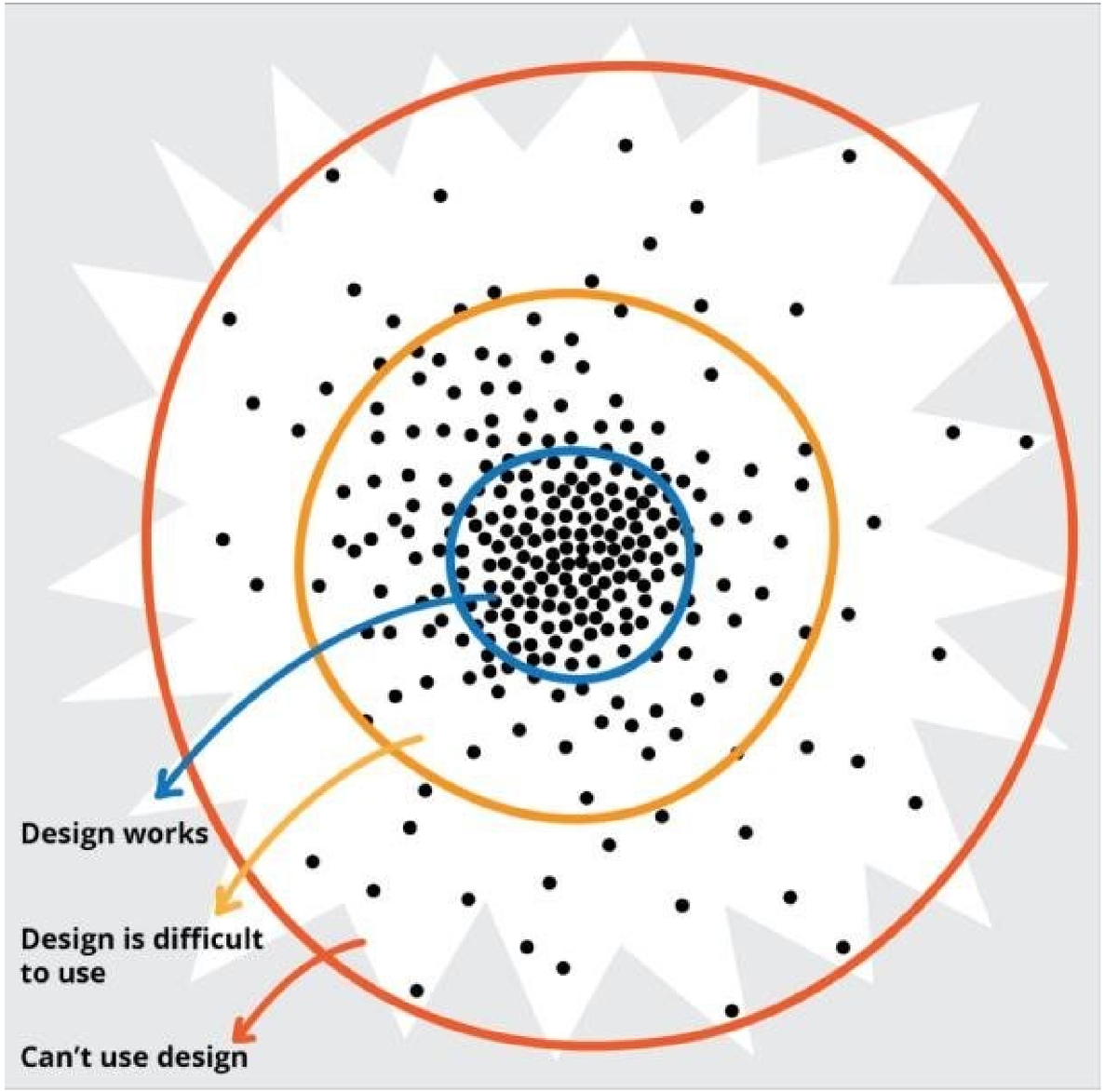
designed to be usable by all people to the greatest extent possible, without the need for adaptation or specialised design.

Inclusive ‘AI’ Design

to support everyone by addressing the unique needs of those often overlooked — edge users and outliers — whether due to age, socioeconomic factors, disabilities, etc.

Sources
Clarkson P. J. et al. https://doi.org/10.1016/j.apergo.2013.03.002
Baibaei M. & Majoobnia M. 2025. https://medium.com/@moisenm/designing-for-everyone-the-imperative-of-inclusive-ai-in-the-era-of-gpt-51e82d32276c

Who are We Designing For .... With?



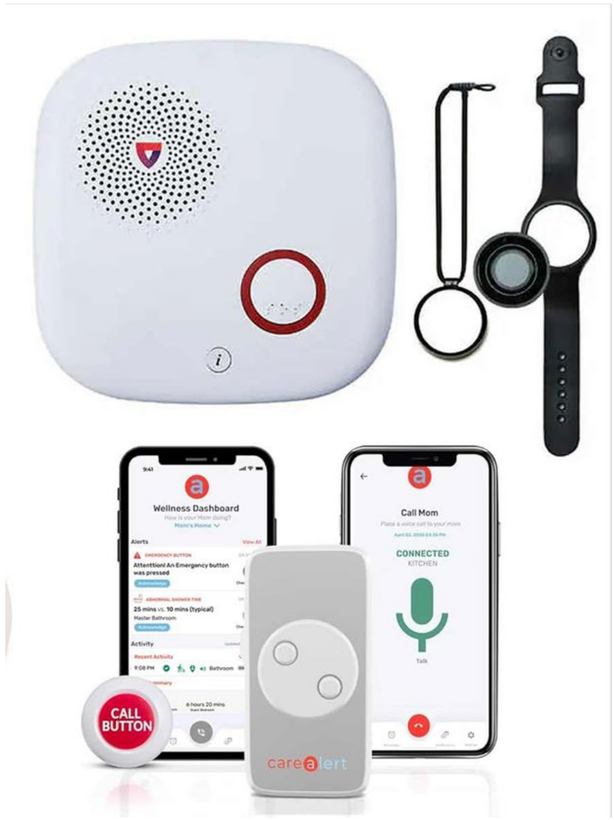
Sources

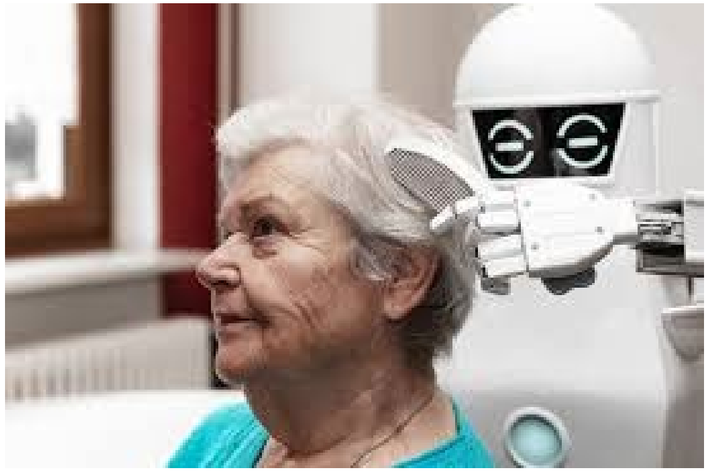
https://accessibilityinclusivedesigncasestudies.wordpress.com/users-technology-rebuilt/challenges-of-inclusive-design-rebuilt/

Baibaei M. & Majoobnia M. 2025. https://medium.com/@moisenm/designing-for-everyone-the-imperative-of-inclusive-ai-in-the-era-of-gpt-51e82d32276c

Who are we designing With?

VOICE ASSISTANTS





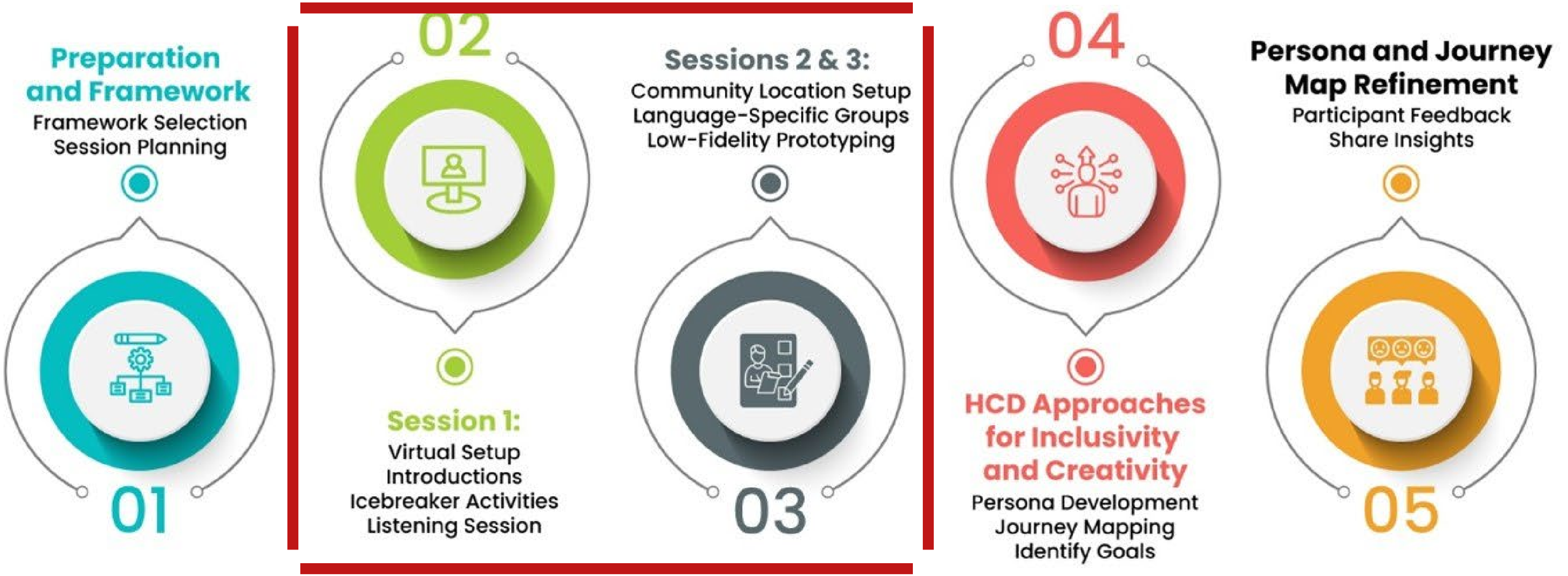
Are we desiging with the People?

Applications of Human-Centered Design to Food Is Medicine Interventions

Sources

Adeleye K,..Ogungbe O. DOI: 10.1161/JAHA.11205

Are we desiging with the People?



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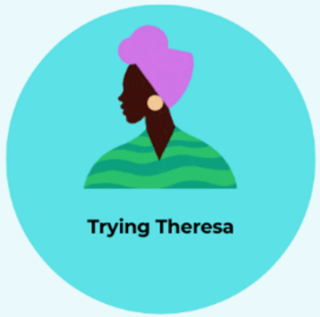
Are we desiging with the People?

THRIVE Persona: Trying Theresa

Personas are used to describe the differing perspectives and experiences of people participating in a study. This will help us better understand if our intervention is truly meeting the needs and addressing the challenges of our participants.



DEMOGRAPHICS

- Immigrant from West Africa
- Middle-aged
- Living in the US for a 10 years+
- Not Medicare eligible yet
- Has cardiovascular conditions (hypertension, overweight)
- Has adult children and a spouse who she cooks for

PRIORITIES

- She doesn't want to have any further health complications or end up having a heart attack like her aunt
- Staying connected to her culture through food
- To be healthy enough to be an active grandparent in the future

MOTIVATION

- Learning how to make cultural foods healthier so she can stay connected to her culture while improving her food regimen
- Aunt had a heart attack due to hypertension and she's afraid to go down the same path

SUPPORT

- Her church health ministry provides health education and community around making healthy choices

RELATIONSHIP

- West African food/food regimen - lots of carbs paired with vegetables and protein
- She loves to eat a good, satisfactory meal
- She's had many negative experiences with dieting

BARRIERS

- Hard to modify food preparation methods while keeping the same great flavor
- Her husband is more traditional and doesn't want to change his food regimen, so she ends up using her old recipes

CHALLENGES

- Healthy, organic foods and rice alternatives are more expensive
- Many people in her family struggle with diabetes. If they haven't been able to successfully change, she doesn't think she can either

HABITS

- Weekly grocery shopping for herself and her family
- She makes homecooked meals and only eats out for special occasions
- She wants to purchase healthier meals, but it would stretch the grocery budget too much

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Adeleye K,..Ogungbe O. DOI: 10.1161/JAHA.11205

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Are we desiging with the People?

Frameworks Used:

Social Cognitive Theory

HCD Double-Diamond Framework

Participants:

36 INDIVIDUAL

75% **female** contributed insights.

RESULT

Healthcare System Integration

Food Access and Education

Community Empowerment

OUTCOME

High Engagement
(100% felt valued)

Positive Recommendations
(92% endorsed similar approaches).

Key components:
Tailored Coaching, Adaptable Food Pharmacy Systems, and Group Education Programs.

Sources

Adeleye K,..Ogungbe O. DOI: 10.1161/JAHA.11205

Are we desiging with the People?

“Do not design anything for the people without the people”

“See... I am retired, I got nothing but time, show me how to do it”

“For me, what would be good if it was transferred into a app”

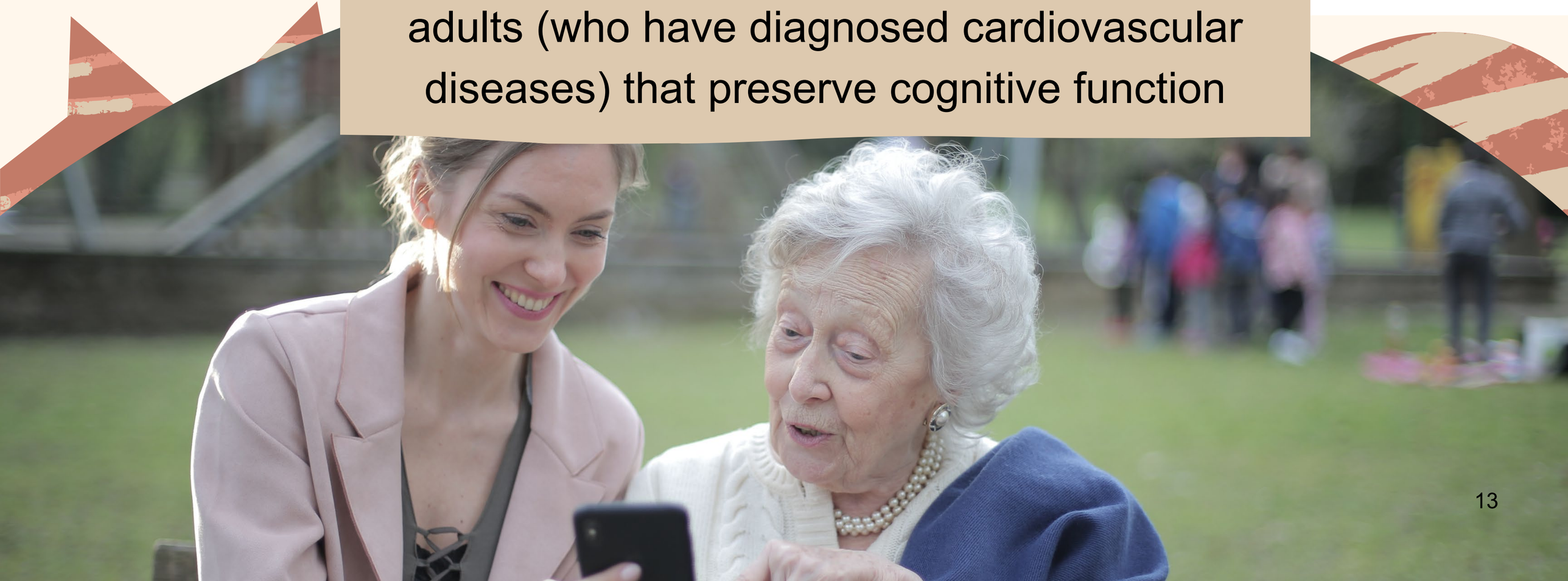
Sources

Adeleye K,..Ogungbe O. DOI: 10.1161/JAHA.11205

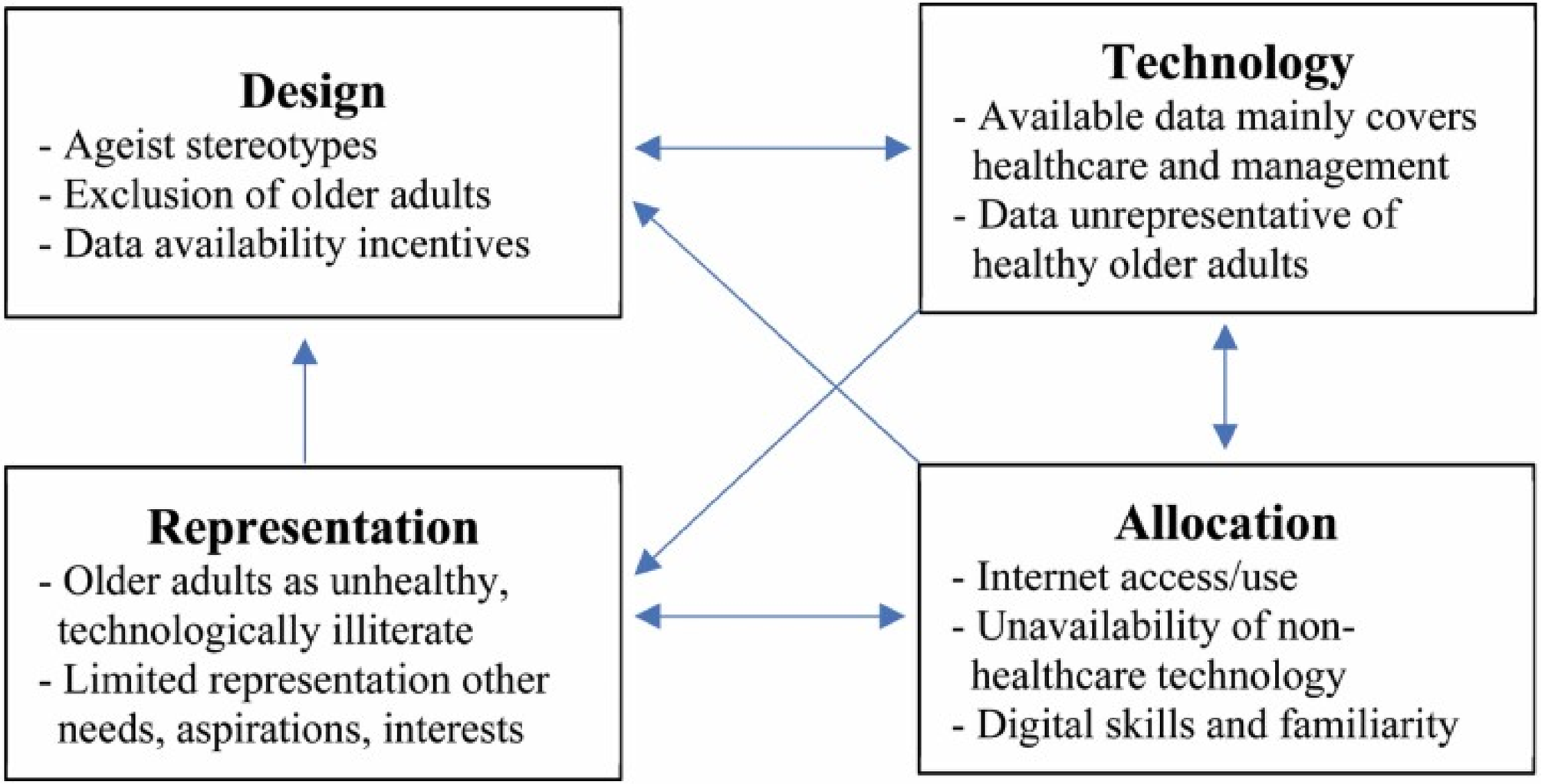
“Do not design anything for the people without the people”

Are we desiging with the People?

To co-design culturally responsive AI-optimized sleep interventions with older adults (who have diagnosed cardiovascular diseases) that preserve cognitive function



Stereotypes and Digital Ageism



Sources

Chu et al. 2022 DOI: 10.1093/geront/gnab167

Mind the Gap: Where AI Meets (or Misses) Aging

- **Representation Issues:** Training dataset, AI studies, Longitudinal data
- **Algorithmic Bias, Fairness**: AI interface design, bias testing
- **User Experience, Accessibility:** insufficient research on how older adults interact with AI

- **Trust and Adoption:** Privacy, limited support for literacy, tailoring
- **Implementation/Sustainability**: testing in real-world, aging-friendly settings
- **Methodological Limitations:** co-design methods/approaches, interdisciplinary collaborations

“Do not design anything for the people without the people”

Thank you!

Bunmi Ogungbe, PhD, MPH, RN

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