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A Digital Dyadic Coach to Promote Oral Self-Care in Older Adults

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Background and Motivation

- The deterioration of oral health in early stage ADRD patients is a critical issue, often exacerbated by their diminished capacity to remember and perform regular oral self care.
- Inconsistent oral self care can lead to rapid deterioration in oral health, and cascade of future co-morbidities.
- Care partners are essential in supporting tooth brushing adherence for individuals with ADRD.
- Behavioral and communication challenges in early-stage ADRD often hinder efforts to maintain oral hygiene.
- Tailored behavioral interventions can empower care partners to improve oral hygiene adherence.
- Our ultimate aim is to enhance oral self-care among individuals with ADRD, empowering care partners to effectively support the individuals and thereby improving health and quality of life for both.

Highlights

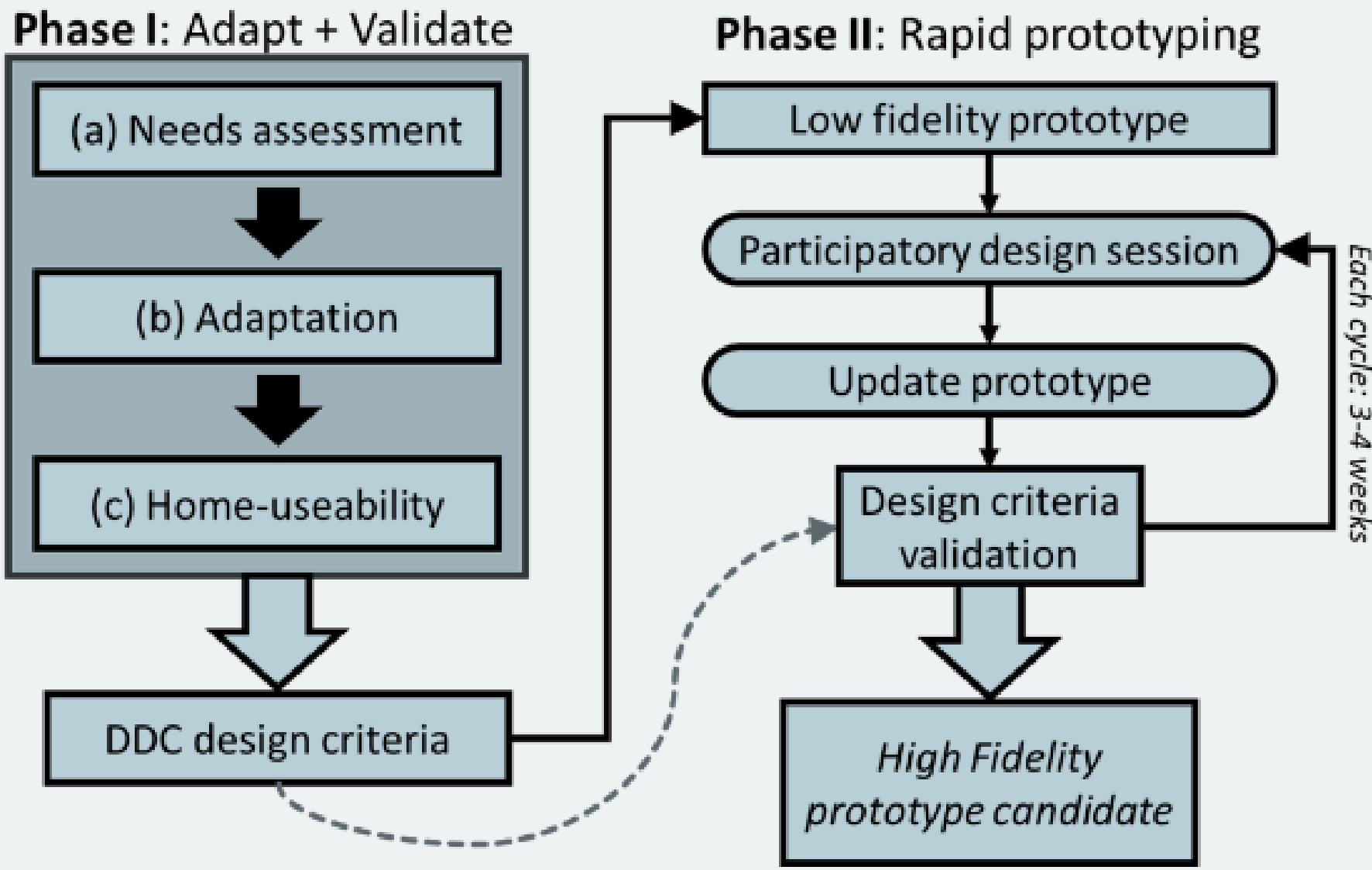
- We conducted focus group interviews with care partner and care recipient dyads to extract key challenges and routines associated with the care recipient's (early stage ADRD patient) oral self-care.
- Key emerging themes:**
- Oral self care adherence varies widely among older adults.
 - **There is a discrepancy between care recipient perception of adherence and care partner's observed adherence.** Communication about these discrepancies were highlighted as a cause for relationship conflict:
 - "We don't always agree on how well he's brushing. If there was something that actually showed it, we wouldn't have to go back and forth about it."
 - "If she were beginning to get forgetful... I could imagine there being much more like sensitive situations... I could imagine there being some defensiveness going on with it."
 - **An objective indicator of oral self-care adherence was viewed as an effective way to reduce relationship conflict.**
- Providing reminders for brushing is a source of frustration for both care partner and care recipient, making dependence and decline more salient to both.
- "I have to remind him to brush his teeth, and sometimes it's difficult to really nail him down to go in there and do it. If an app did that for me, maybe it wouldn't feel like I'm always the one on his case."
 - "I don't think the goal is to hound somebody if they've missed their brushing, but to maybe have an idea if it's becoming a habit..."

Conceptual model for dyad intervention

- Based on key themes from the focus group, we identified targeted mechanisms at three levels: individual with ADRD (care recipient), care partner, and dyad.
- **ADRD Individual:** Forgetfulness, assessed twice daily via sensor-enabled toothbrushes.
 - **Care-Partner:** Readiness and capability to support autonomy in individuals with early-stage ADRD.
 - **Dyad:** Congruence in perception of ADRD individual's adherence to oral self care routines.

Next steps

- Participants will use app and an existing ebrush:
1. Experience use of ebrush and connected app. Participants will be engaged in the development of a wireframe app using an iterative design process.



2. Brushing data from older individuals and individuals with early stage ADRD will be collected to inform development of methods for personalizing intervention options.

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