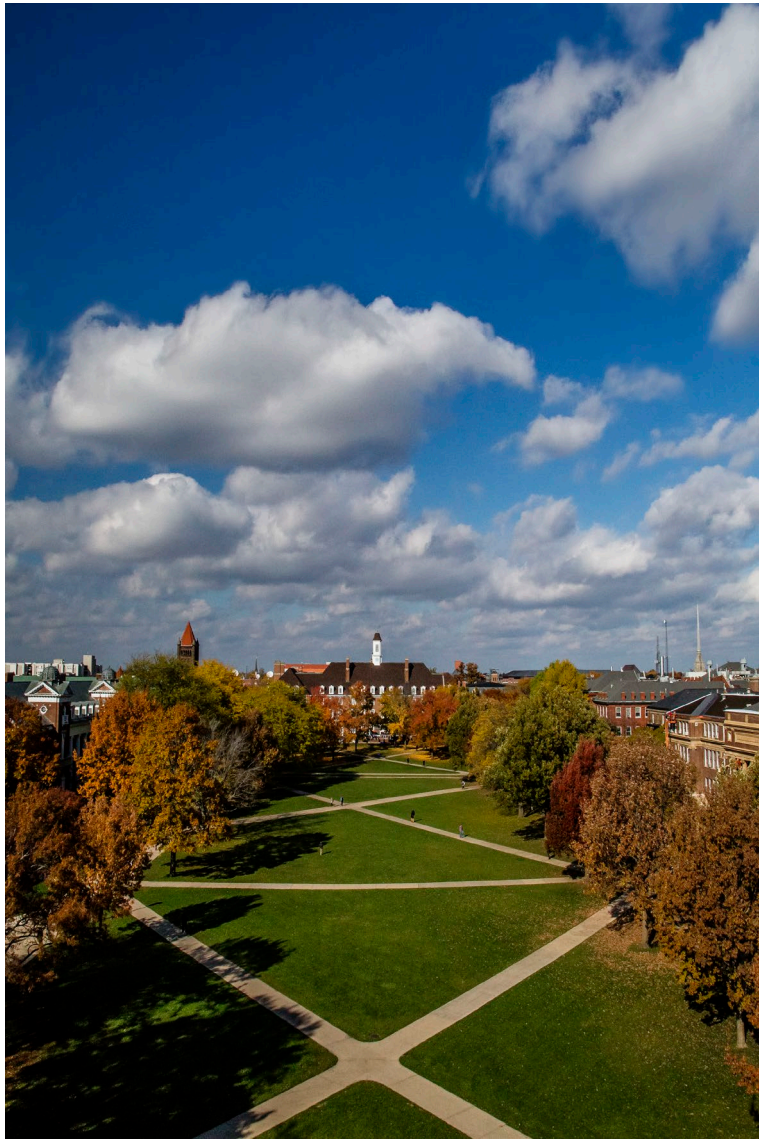

Aging in Place with Dementia

Session 5: Social Isolation and Engagement

Raksha Anand Mudar, PhD, CCC-SLP

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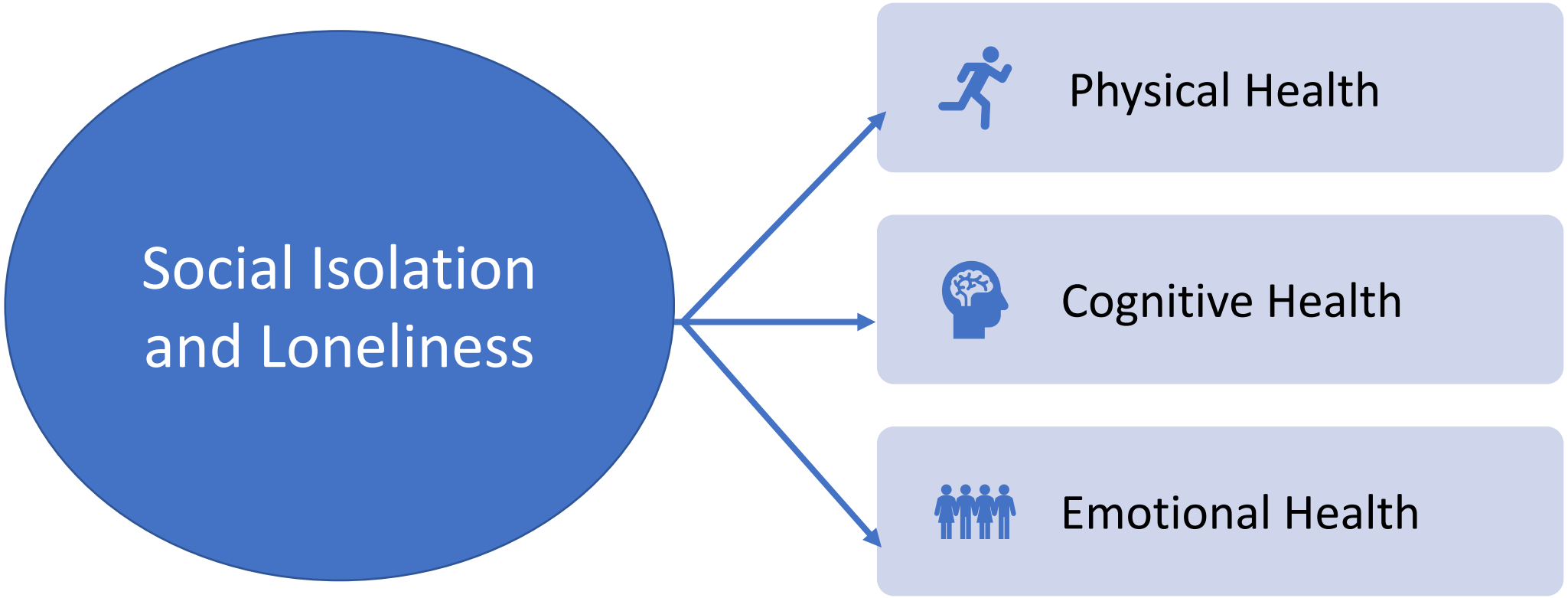
College of Applied Health Sciences
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

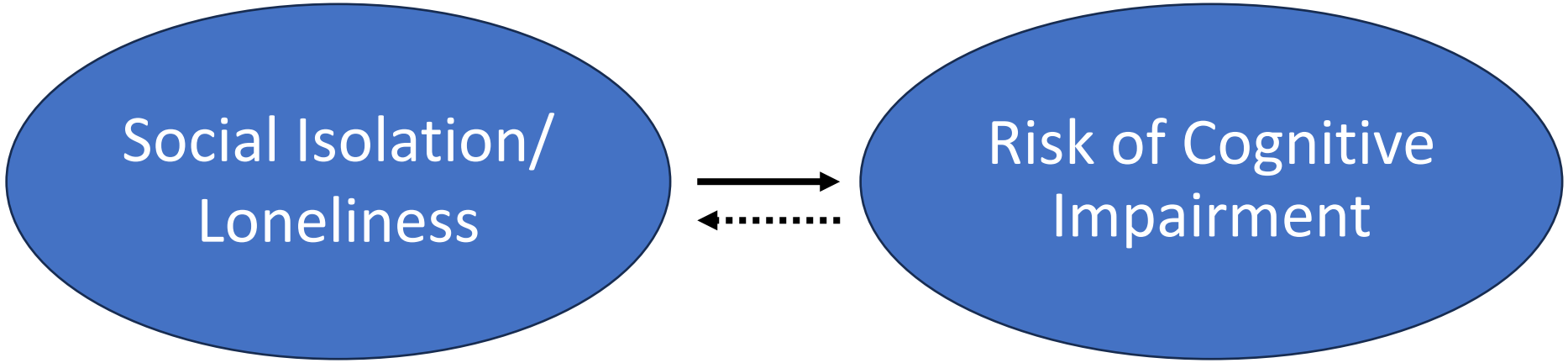
Overview

1. Relationship between Social and Cognitive Health
2. Framework of Social Engagement
3. Technology to Support Social Engagement
4. Scalability of Social Engagement Interventions

Social Isolation and Loneliness: Impact



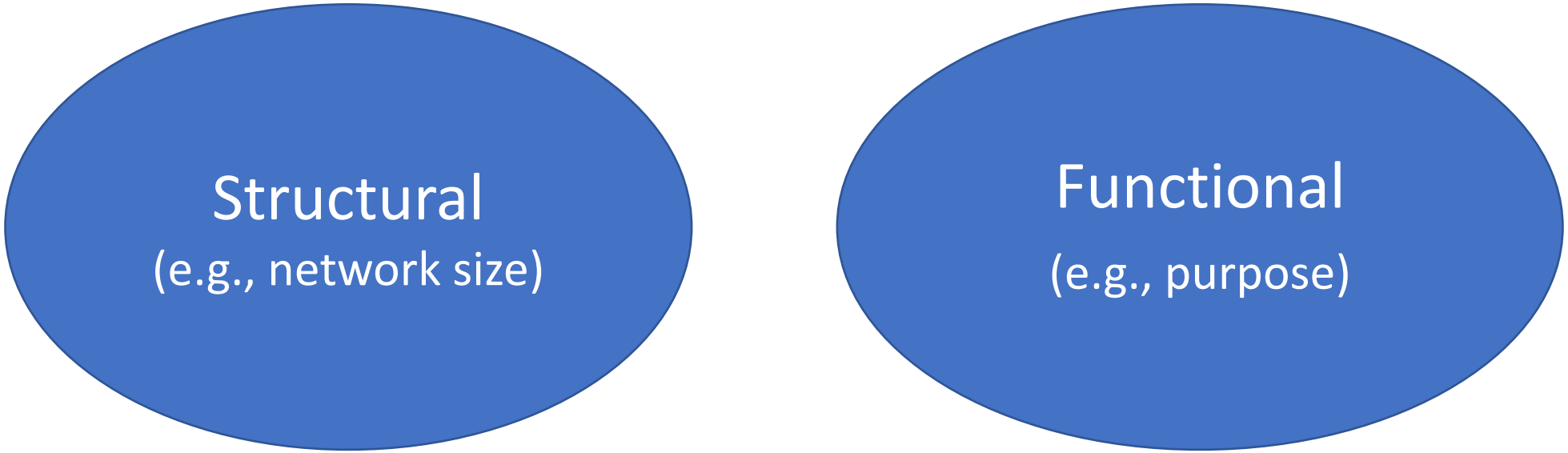
Relationship Between Social Health and Cognition Health



1. Is social isolation/loneliness related to accelerated cognitive decline in populations known to be at risk of dementia?
    - Mild Cognitive Impairment
    - Older Caregivers of Persons with Dementia
2. How do other modifiable risk factors (e.g., hearing loss) mediate or moderate relationship between social health and cognitive health in at-risk populations?

Social Engagement

Participation in **social activities** and maintenance of **social connections**



frontiers in Public Health

REVIEW
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An Integrative Framework to Guide Social Engagement Interventions and Technology Design for Persons With Mild Cognitive Impairment

Elizabeth A. Lydon[1], *Lydia T. Nguyen*[2], *Qiong Nie*[3], *Wendy A. Rogers*[3] and *Raksha A. Mudar*[1]*

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Social isolation and loneliness in older adults are associated with poor health outcomes and have been linked to an increased risk of cognitive impairment and incident dementia. Social engagement has been identified as a key factor in promoting positive health behaviors and quality of life and preventing social isolation and loneliness. Studies involving cognitively healthy older adults have shown the protective effects of both in-person and technology-based social engagement. However, the benefits of social engagement for people who are already at-risk of developing dementia, namely those with mild cognitive impairment (MCI), have yet to be elucidated. We present a narrative review of the literature, summarizing the research on social engagement in MCI. First, we identified social networks (quality, size, frequency, and closeness) and social activities (frequency, format, purpose, type, and content) as two overarching dimensions of an integrative framework for social engagement derived from literature examining

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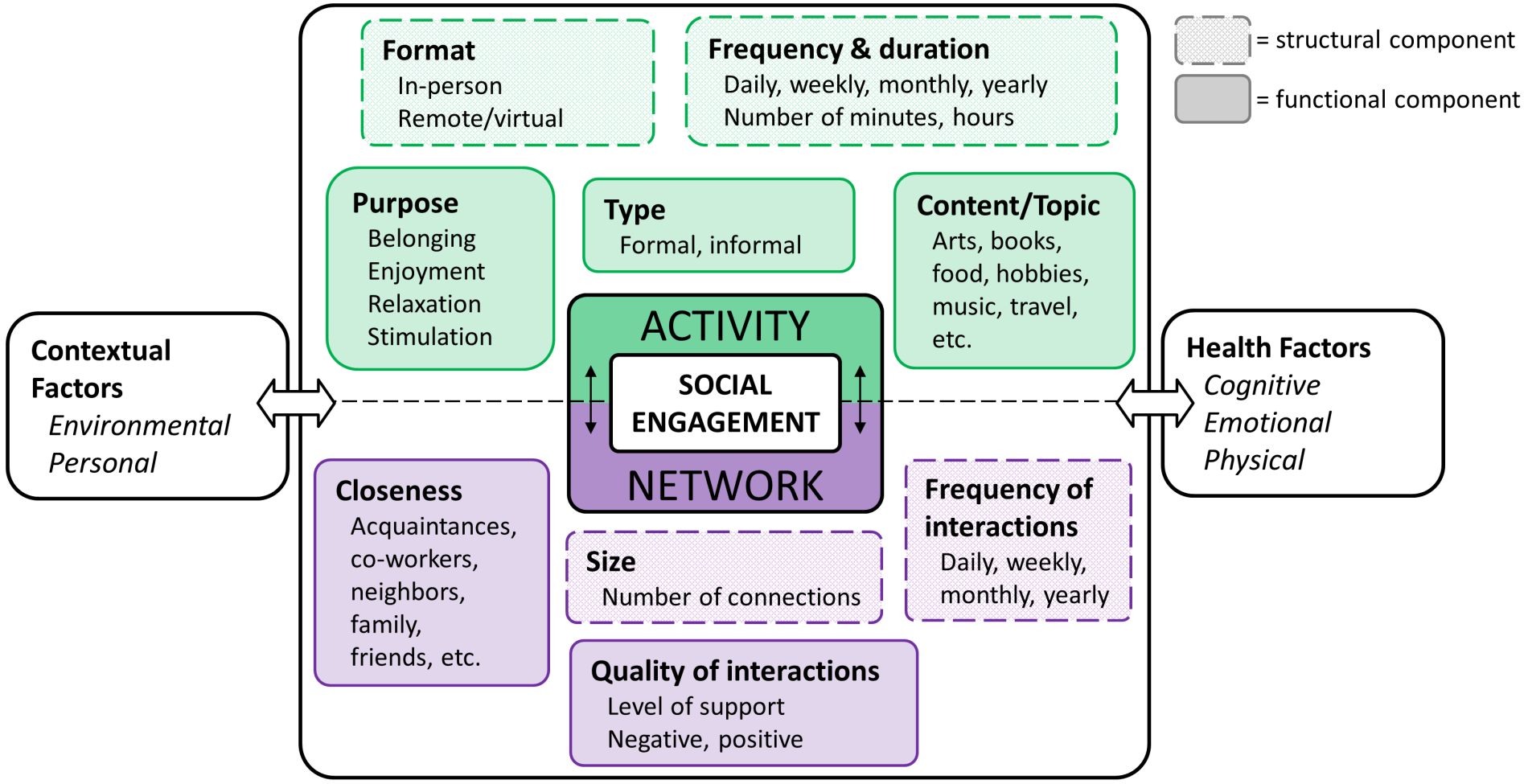
Lydon, E. A., Nguyen, L. T., Nie, Q., Rogers, W. A., & Mudar, R. A. (2022). An integrative framework to guide social engagement interventions and technology design for persons with mild cognitive impairment. *Frontiers in Public Health, 9.* https://doi.org/10.3389/fpubh.2021.750340

Framework of Social Engagement



Lydon, E. A., et al. (2022)

Leveraging Technology to Support Social Engagement in At-Risk Populations

Technology designed for and with older adults

Original Research

Nie et al., Gerontechnology (2020) 20:1
https://doi.org/10.4017/gt.2020.20.1.398.08

Design guidance for video chat system to support social engagement for older adults with and without mild cognitive impairment

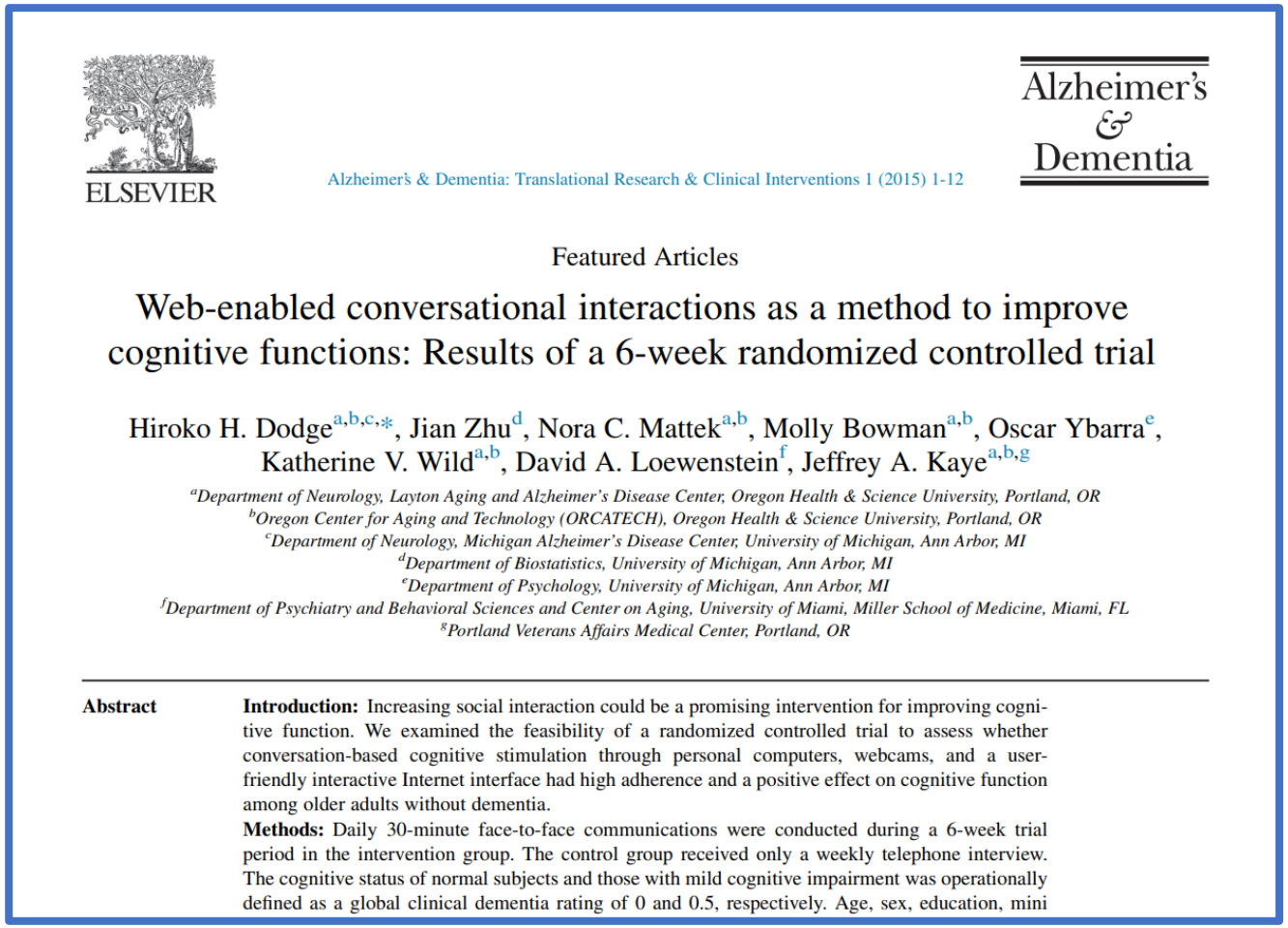
Qiong Nie MS[a], Lydia T. Nguyen PhD[b], Dillon Myers BS[c], Alan Gibson MS[c], Chantal Kerssens PhD[d], Raksha A. Mudar PhD CCC-SLP[b,e], Wendy A. Rogers PhD[a,*]

[a]Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign, Illinois, USA; [b]Neuroscience Program, University of Illinois at Urbana-Champaign, Illinois, USA; [c]OneClick.chat, Philadelphia, USA; [d]Center for Inclusive Design and Innovation, Georgia Institute of Technology, Georgia, USA; [e]Department of Speech and Hearing Science, University of Illinois at Urbana-Champaign, Illinois, USA; *Corresponding author: wendyr@illinois.edu

Abstract

Background: Social engagement technologies offer an opportunity to reduce social isolation. However, there are barriers to adoption among older adults with and without Mild Cognitive Impairment (MCI). Technology designed to meet the needs of those users may improve the acceptability, adoption, and benefits of social engagement technology.
Objective: The goal was to assess older adults' needs and preferences for using video chat systems. We used the Technology Acceptance Model as a framework for evaluating and optimizing usability of a web-based video chat system for older adults with and without MCI.

Nie, Q., Nguyen, L. T., Myers, D., Gibson, A., Kerssens, C., Mudar, R. A., & Rogers, W. A. (2020). Design guidance for video chat system to support social engagement for older adults with and without mild cognitive impairment. *Gerontechnology*, *20*(1), 1-15. https://doi.org/10.4017/gt.2020.20.1.398.08



ELSEVIER

Alzheimer's & Dementia: Translational Research & Clinical Interventions 1 (2015) 1-12

Alzheimer's & Dementia

Featured Articles

Web-enabled conversational interactions as a method to improve cognitive functions: Results of a 6-week randomized controlled trial

Hiroko H. Dodge[a,b,c,*], Jian Zhu[d], Nora C. Mattek[a,b], Molly Bowman[a,b], Oscar Ybarra[e], Katherine V. Wild[a,b], David A. Loewenstein[f], Jeffrey A. Kaye[a,b,g]

[a]Department of Neurology, Layton Aging and Alzheimer's Disease Center, Oregon Health & Science University, Portland, OR
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[c]Department of Neurology, Michigan Alzheimer's Disease Center, University of Michigan, Ann Arbor, MI
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[e]Department of Psychology, University of Michigan, Ann Arbor, MI
[f]Department of Psychiatry and Behavioral Sciences and Center on Aging, University of Miami, Miller School of Medicine, Miami, FL
[g]Portland Veterans Affairs Medical Center, Portland, OR

Abstract

Introduction: Increasing social interaction could be a promising intervention for improving cognitive function. We examined the feasibility of a randomized controlled trial to assess whether conversation-based cognitive stimulation through personal computers, webcams, and a user-friendly interactive Internet interface had high adherence and a positive effect on cognitive function among older adults without dementia.

Methods: Daily 30-minute face-to-face communications were conducted during a 6-week trial period in the intervention group. The control group received only a weekly telephone interview. The cognitive status of normal subjects and those with mild cognitive impairment was operationally defined as a global clinical dementia rating of 0 and 0.5, respectively. Age, sex, education, mini

Dodge, H. H., Zhu, J., Mattek, N., Bowman, M., Ybarra, O., Wild, K., Loewenstein, D. A., & Kaye, J. A. (2015). Web-enabled Conversational Interactions as a Means to Improve Cognitive Functions: Results of a 6-Week Randomized Controlled Trial. *Alzheimer's & dementia (New York, N. Y.)*, *1*(1), 1–12. https://doi.org/10.1016/j.trci.2015.01.001

Yu, K., Wild, K., Potempa, K., Hampstead, B. M., Lichtenberg, P. A., Struble, L. M., Pruitt, P., Alfaro, E. L., Lindsley, J., MacDonald, M., Kaye, J. A., Silbert, L. C., & Dodge, H. H. (2021). The Internet-Based Conversational Engagement Clinical Trial (I-CONECT) in Socially Isolated Adults 75+ Years Old: Randomized Controlled Trial Protocol and COVID-19 Related Study Modifications. *Frontiers in digital health*, *3*, 714813. https://doi.org/10.3389/fdgth.2021.714813

The Internet-Based Conversational Engagement Clinical Trial (I-CONECT) in Socially Isolated Adults 75+ Years Old: Randomized Controlled Trial Protocol and COVID-19 Related Study Modifications

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*Kexin Yu[1,2], Katherine Wild[3], Kathleen Potempa[4], Benjamin M. Hampstead[5,6], Peter A. Lichtenberg[7], Laura M. Struble[8], Patrick Pruitt[3,7], Elena L. Alfaro[9], Jacob Lindsley[10], Mattie MacDonald[11], Jeffrey A. Kaye[3], Lisa C. Silbert[3] and Hiroko H. Dodge[3]**

[1] Suzanne Dworak-Peck School of Social Work, University of Southern California, Los Angeles, CA, United States, [2] Edward R. Roybal Institute on Aging, University of Southern California, Los Angeles, CA, United States, [3] Layton Aging and Alzheimer's Disease Center, Department of Neurology, Oregon Health & Science University, Portland, OR, United States, [4] Department of Systems, Populations and Leadership, University of Michigan School of Nursing, Ann Arbor, MI, United States, [5] Mental Health Service, Veterans Affairs Medical Center Ann Arbor Healthcare System, Ann Arbor, MI, United States, [6] Research Program on Cognition and Neuromodulation Based Interventions, Department of Psychiatry, University of Michigan, Ann Arbor, MI, United States, [7] The Institute of Gerontology, Wayne State University, Detroit, MI, United States, [8] Department of Health Behavior and Biological Sciences, School of Nursing, University of Michigan, Ann Arbor, MI, United States, [9] Department of Psychiatry, University of Wisconsin-Madison, Madison, WI, United States, [10] The School of Psychological Science, Oregon State University, Corvallis, OR, United States, [11] Syneos Health, Portland, OR, United States

Background: Increasing social interactions through communication technologies could offer a cost-effective prevention approach that slows cognitive decline and delays the onset of Alzheimer's disease. This paper describes the protocol of an active project named "Internet-based conversational engagement clinical trial (I-CONECT)" (ClinicalTrials.gov: NCT02871921). The COVID-19 pandemic related protocol modifications are also addressed in the current paper.

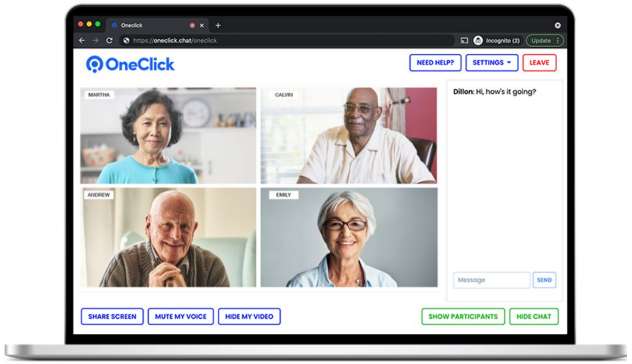
Methods: I-CONECT is a multi-site, assessor-blind, randomized controlled behavioral intervention trial (RCT). We aim to randomize 320 socially isolated adults 75+ years old [160 Caucasian and 160 African American participants, 50:50 split between those with

Enhancing Quality of Life for Older Adults with and without MCI through Social Engagement over Video Technology

NIH/National Institute on Aging, SBIR Phase II Grant [R44 AG059450]

Connect with others outside

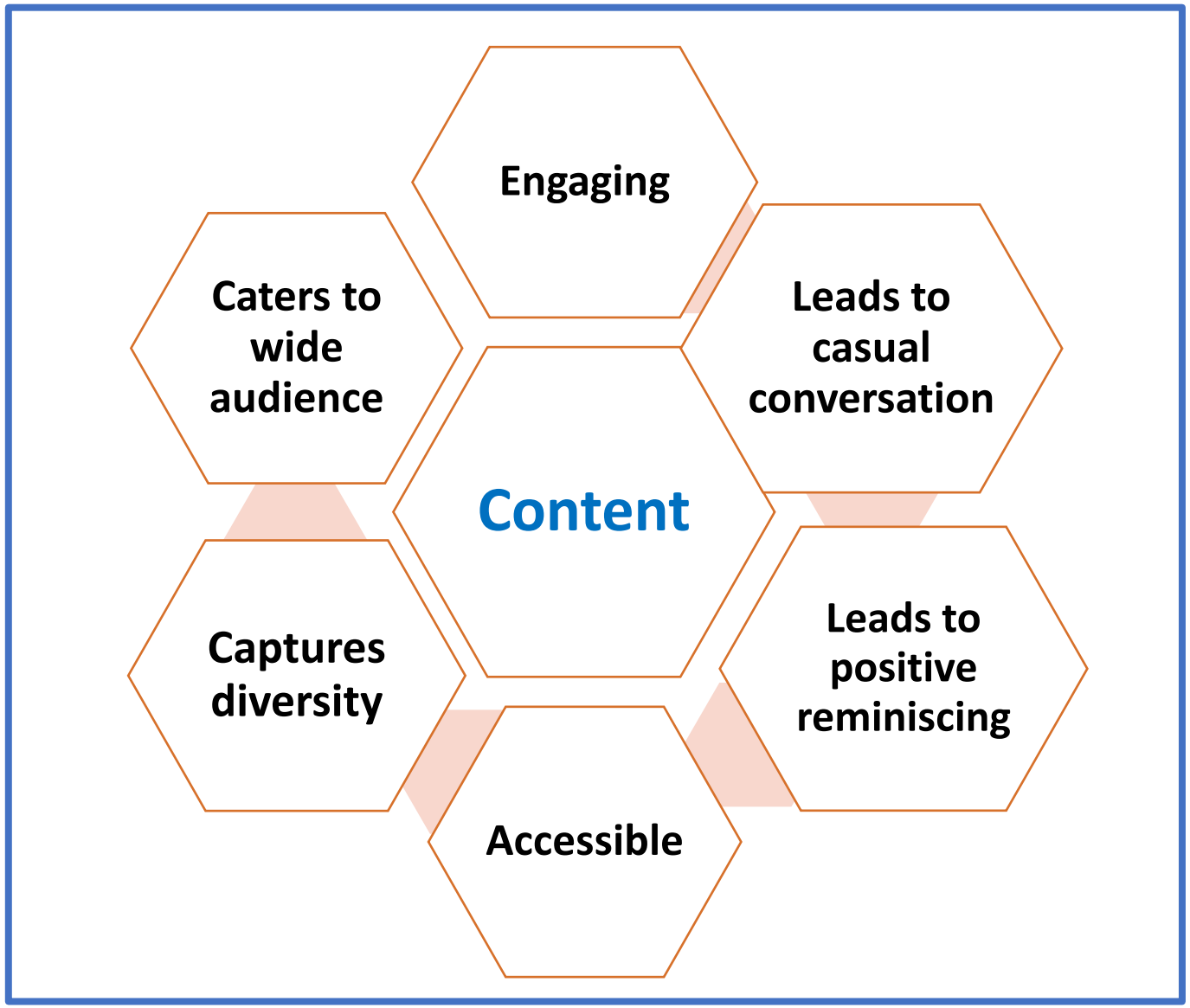
Attend to social needs



Reflect with others in a casual setting

Engage with others on topics of shared interests

Content Development



5 content areas (60 unique topics)

- Arts and Culture
- Nature, Health, and Wellness
- Life Experiences
- Science and Technology
- Recreation and Sports

Event Structure

Participants gathered in the main room with the host

Host welcomed everyone; introduced presentation topic

Participants watched the presentation

The host explained next steps (breakout rooms + discussion)

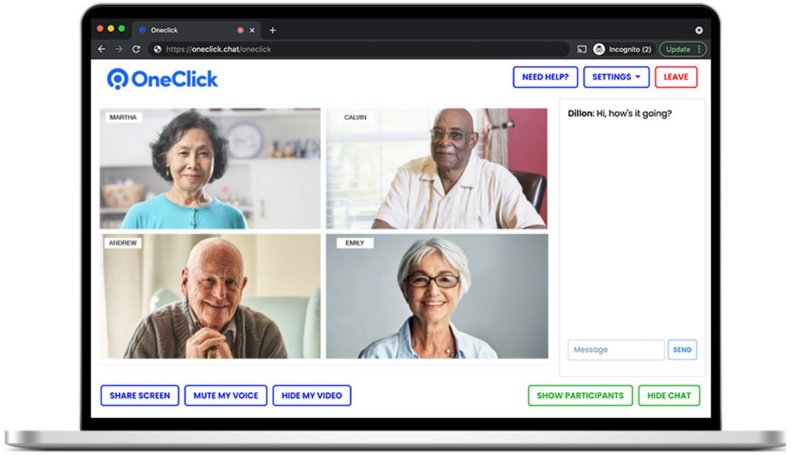
Participants entered breakout rooms for discussion

Participants discussed the topic for 30 minutes

Discussion ended

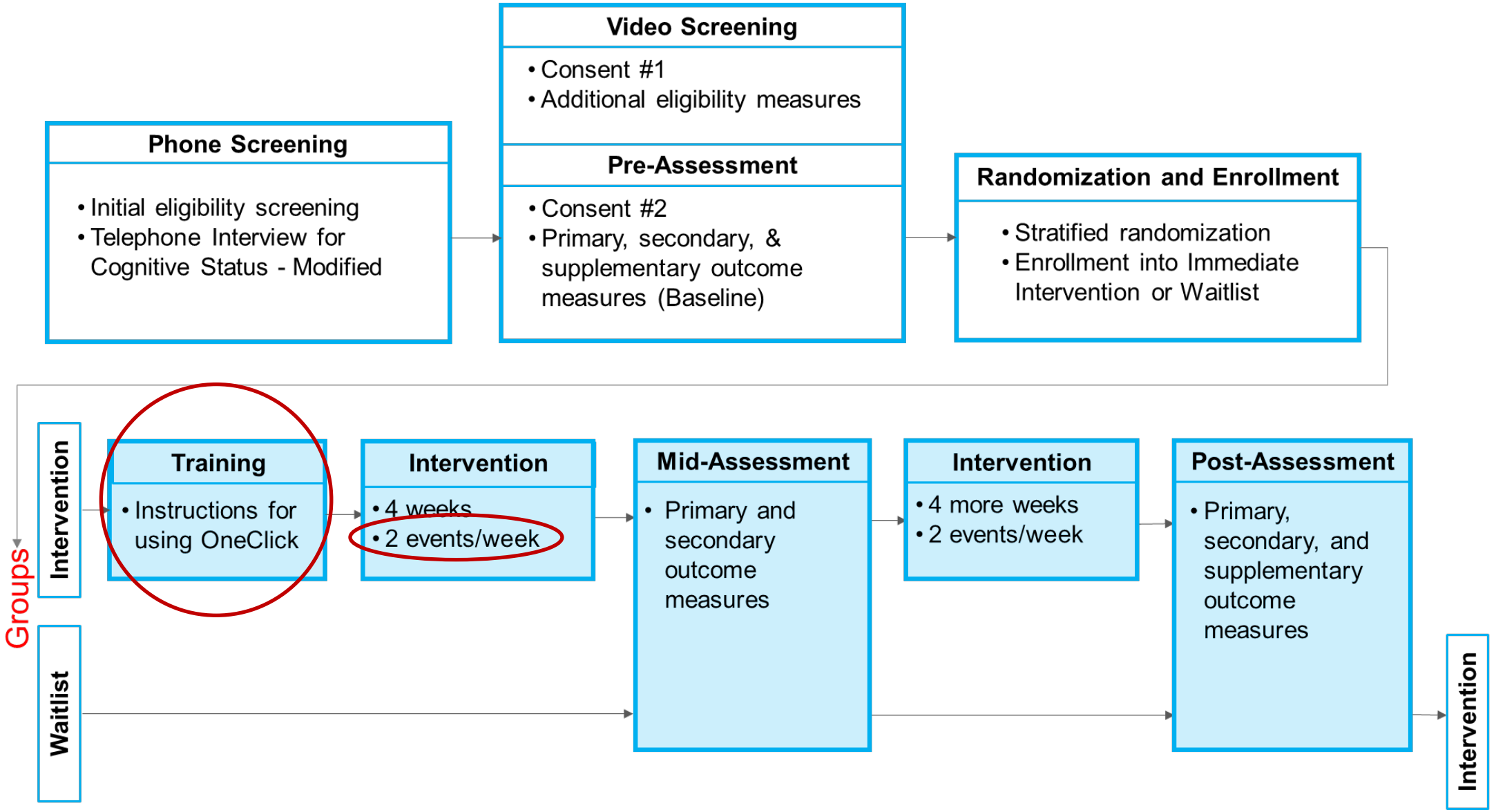
Participants left event

Participants answered feedback question

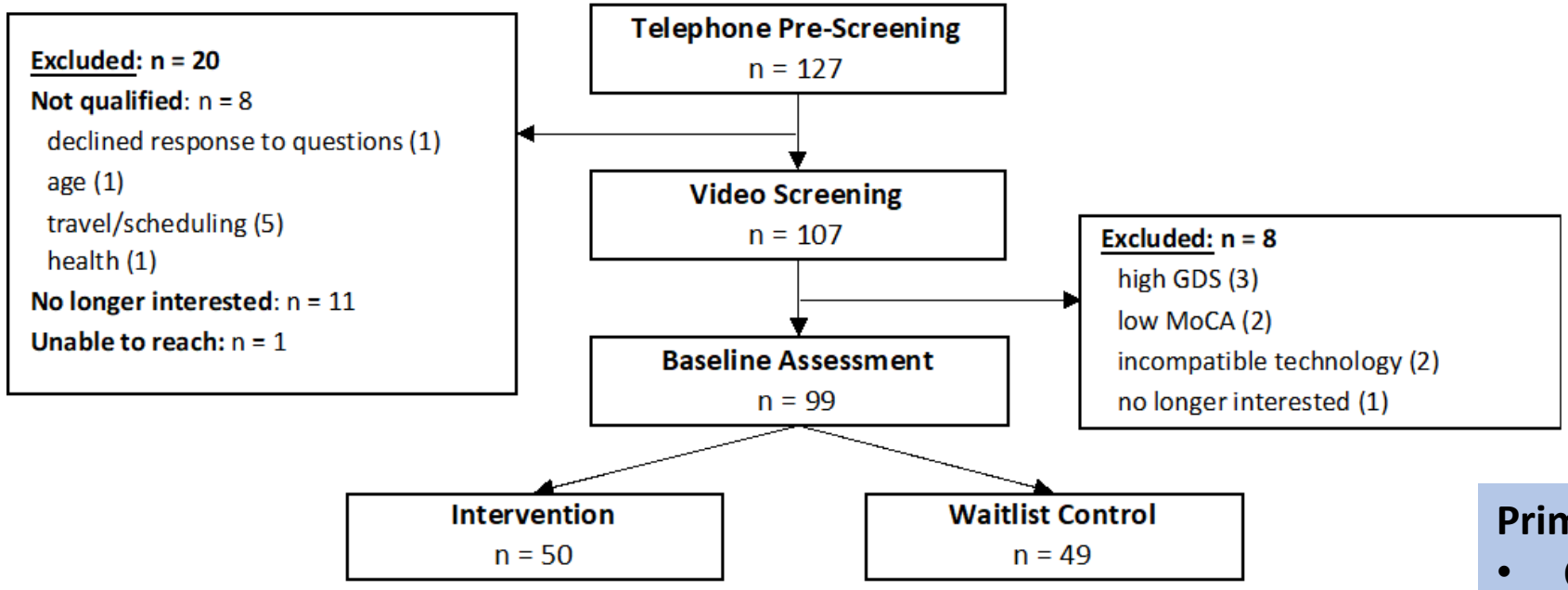


RCT to Assess Efficacy

(ClinicalTrials.gov ID NCT05380180)



Consort Diagram



Primary Outcomes

- Change in Social Isolation Measured by Friendship Scale
- Change in Loneliness Measured by University of California - Los Angeles (UCLA) Loneliness Scale
- Change in Quality of Life Measured by Quality of Life in Alzheimer's Disease

Preliminary Results

- Participants with and without MCI were able to successfully utilize the OneClick platform to engage with each other
- They reported enjoying the variety of topics offered for social engagement
- Pre-training to utilize technology was valuable to support participant
- Occasional technology issues were not barriers to continued participation
- Participants expressed interest in continuing to use the platform for social engagement after study completion
- Home- and Community-Based Organizations (HCBOs) staff expressed interest in using the platform to support their programs
- In-depth qualitative and quantitative analyses are ongoing to explore the efficacy of this intervention to support social engagement and quality of life

Expanding Scope to Other Populations

Social Engagement using Video Technology for Care Partners of Persons with Dementia

Funding Agency: RRF Foundation for Aging (Grant #2021050), 6/2021-12/2023

Principal Investigators: Raksha Mudar, Minakshi Raj, & Wendy Rogers

- Study ongoing (n=61)
- Intervention design was modified to suit the needs of care partners
- Intervention delivered on Zoom

Scalability of Social Engagement Interventions

- Individual vs. group opportunities
- Flexibility in technology platforms used to support social engagement opportunities
- Developing training protocols to support the use of technology by users with varied technology proficiency
- Thinking beyond RCTs
  - Considering pragmatic trials and adaptive intervention designs
  - Using Home and Community-based Organizations (HCBOs) as test beds to optimize interventions before launching RCTs
  - Developing training protocols to support community-based implementation by HCBOs
- Identifying minimal intervention dose that yields maximum benefits