



2020 NRTRC TAO VIRTUAL CONFERENCE



Northwest Regional Telehealth Resource Center and the Telehealth Alliance of Oregon **Welcome You**

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VIRTUAL SESSION INSTRUCTIONS

- Audio and video are muted for all participants
- Use the Q&A feature to ask questions An icon representing a Q&A feature, consisting of two overlapping speech bubbles: a larger blue one at the bottom and a smaller orange one at the top.
- Moderator will read questions to the speaker
- Presentation slides are posted at <https://nrtrc.org/sessions>. Recordings will be posted after the conference.



Removing Obstacles to Engagement: What Makes an Effective Telehealth Intervention for Older Adults?



- Moderator: Cathy Britain
- Presenters:
 - Supriya Pandya, Senior Intervention Coordinator, Oregon Health and Science University
 - Khoa Nguyen, Lead Technology Coordinator, Oregon Health and Science University
 - Hiroko Dodge, Overall Principle Investigator, Oregon Health and Science University
 - Alyx Shepherd, Research Coordinator, Oregon Health and Science University
 - Annie Dillon, Intervention Coordinator, Oregon Health & Science University
 - Avery Richardson, Research Assessor, Oregon Health and Science University
 - Colton Scavone, Research Assessor, Oregon Health and Science University

REMOVING OBSTACLES TO ENGAGEMENT: WHAT MAKES AN EFFECTIVE TELEHEALTH INTERVENTION FOR OLDER ADULTS?

PANDYA, S., NGUYEN, K., SCAVONE, C., RICHARDSON, A., DILLON, A., SHEPARD, A. & DODGE, H.

**LESSONS FROM
THE
I-CONNECT STUDY**



OBJECTIVES

Attendees will...

- Learn about the ongoing process of establishing a user-friendly technology platform
- Gain insight into our experience in creating natural engagements through telehealth technologies
- Understand the social barriers we have encountered thus far, and our attempts to minimize and overcome them.

SOCIAL ISOLATION AND DEMENTIA

- Adults over 75 years of age are one of the fastest growing segments of the population and face the highest risk of developing social isolation and dementia.

Social Isolation^{1,2}

- 1 in 5 Americans report feeling lonely¹
- 43% of seniors report daily feelings of loneliness²

Health Risks^{1,2}

- 29% increased risk of Coronary Heart Disease²
- 32% increased risk of stroke²

Living Alone²

- 28% of seniors live alone¹

SOCIAL ISOLATION AND DEMENTIA

- Research studies have shown that having a rich social network improves health and lessens the risk of developing dementia.

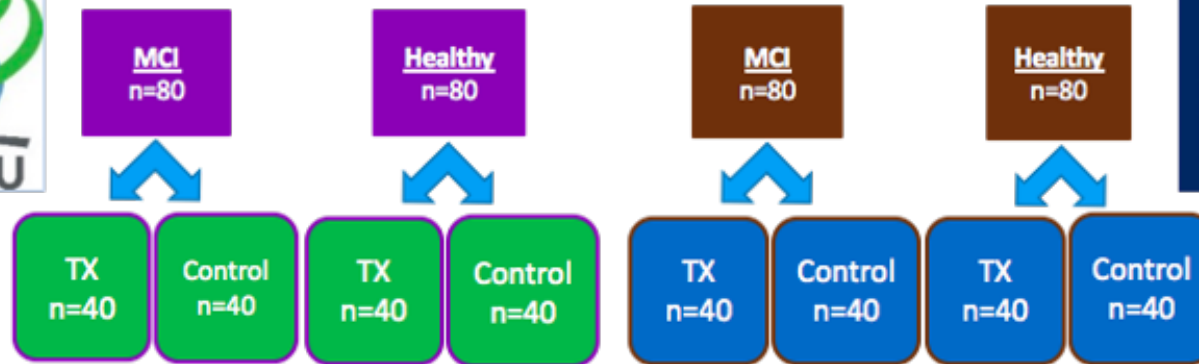


STUDY QUESTIONS AND AIMS

- Does increasing social interactions improve or sustain cognitive function in older adults?
- Could increasing daily social contact through communication technologies offer a cost-effective home-based prevention program?
- Examine the efficacy of our intervention using cognitive test scores & functional measures.



STUDY DESIGN



TX: Video Chat, 4 times/week: 6 months, 2 times/ week: 6 months
Control: 1/wk phone check.

Novel Outcome Measures: Memory by Electronic Pill Box; Conversational Speech & Language Quantification; vMRI, DTI, resting-state fMRI

N=320 at baseline, with 10% drop out, expected completers N=288
(144 MCI, 144 Normals)

BARRIERS TO ENROLLMENT

- Social isolation
 - Structural barriers to social interaction
 - Perceived social isolation
- Cultural differences between study sites



VIDEO CHAT DEVICE (VCD)



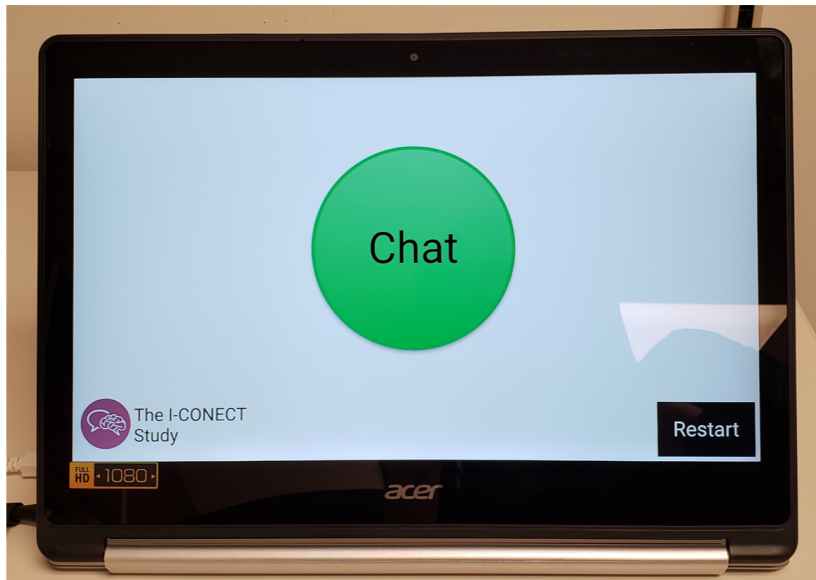
VIDEO CHAT DEVICE (VCD)

Three Basic Goals

- Easy to use
- Simple to connect
- Cost-effective



VIDEO CHAT DEVICE (VCD)



What is the device?

- Entry level 2-in-1 Chromebook
- Device managed through Google's G Suite Enterprise for Education
- Low-cost lifetime license per device
- Runs our in-house developed Chrome App
- Uses Cisco Meeting for the backend

I-CONNECT CHAT APP

How was it made?

- Started as AutoHotkey macros that ran on keypress
- Moved scripts to Javascript and added a UI to simplify
- Converted into a Chrome Web App and hosted on the Chrome Web store



I-CONNECT CHAT APP

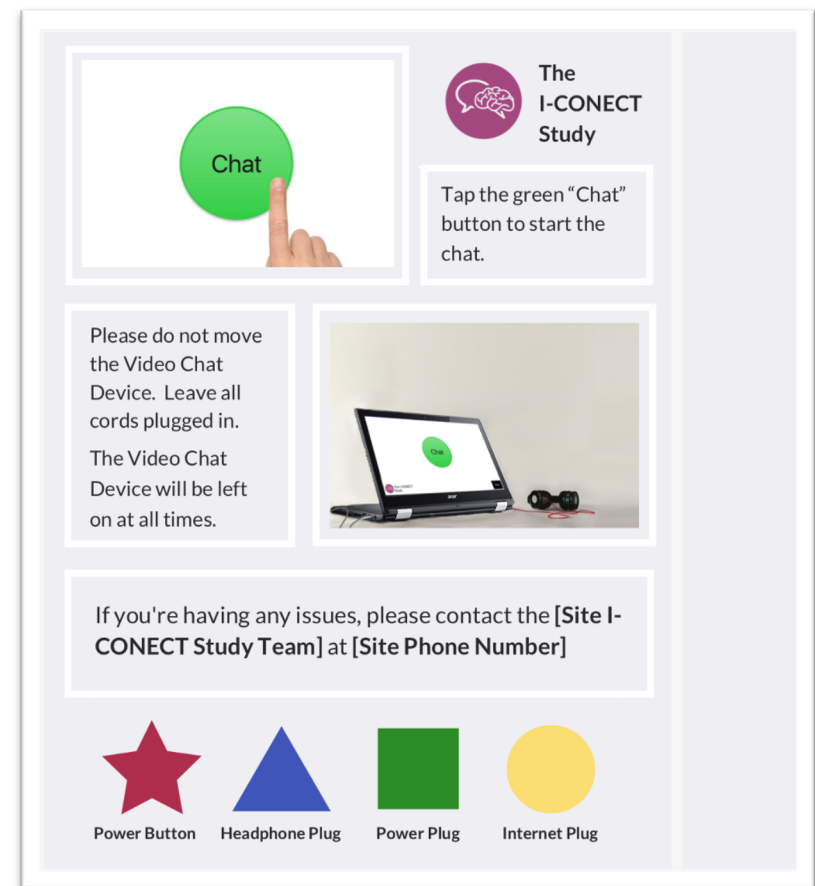
How have participants responded?



- Many are initially intimidated by technology but open up to the idea after their first chat.
- Using our chat device has increased confidence to approach other technologies independently.
- Video chatting and seeing people's faces makes a difference in the quality of the conversation.

TECHNICAL SUPPORT

Technical support and ease of troubleshooting is an integral part of any successful technology platform to ensure continuous function.



I-CONNECT CHAT APP



The I-CONNECT
Study

Restart

TECHNICAL SUPPORT



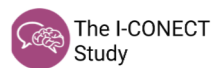
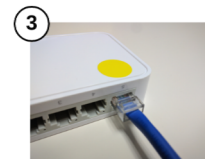
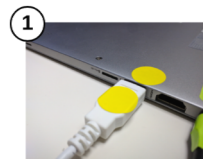
TECHNICAL SUPPORT



Restart

Power warnings...


Internet warnings...



Restart

TECHNICAL SUPPORT


1




2

Internet unplugged


Check the following:



3




4




5


Power unplugged

Check the following:



6



The I-CONNECT Study

Restart


And both.

Even mid-chat without interruption!


Internet unplugged

Check the following:

1



2



3



Restart

WHAT WE LEARNED MAKING THE APP

Dry hands affect the capacitive touchscreen's ability to detect touch

- Made the chat button more sensitive to touch and allowed for a press and hold function to work

Devices in the bedroom may bother participants at night and create a privacy issue

- Made a screensaver that comes on in the evening
- Provided felt cover to help with privacy and further reduce the light when not in use

WHAT WE LEARNED MAKING THE APP

Better quality internet gives better quality chats

- Rural locations suffered greatly from poor internet connections which limited the video and audio quality during the chats.
- More time is spent troubleshooting and some issues may never be fully resolved.
- Physical ethernet connections whenever possible.

WHAT WE LEARNED MAKING THE APP

Application updates may cause unintended issues

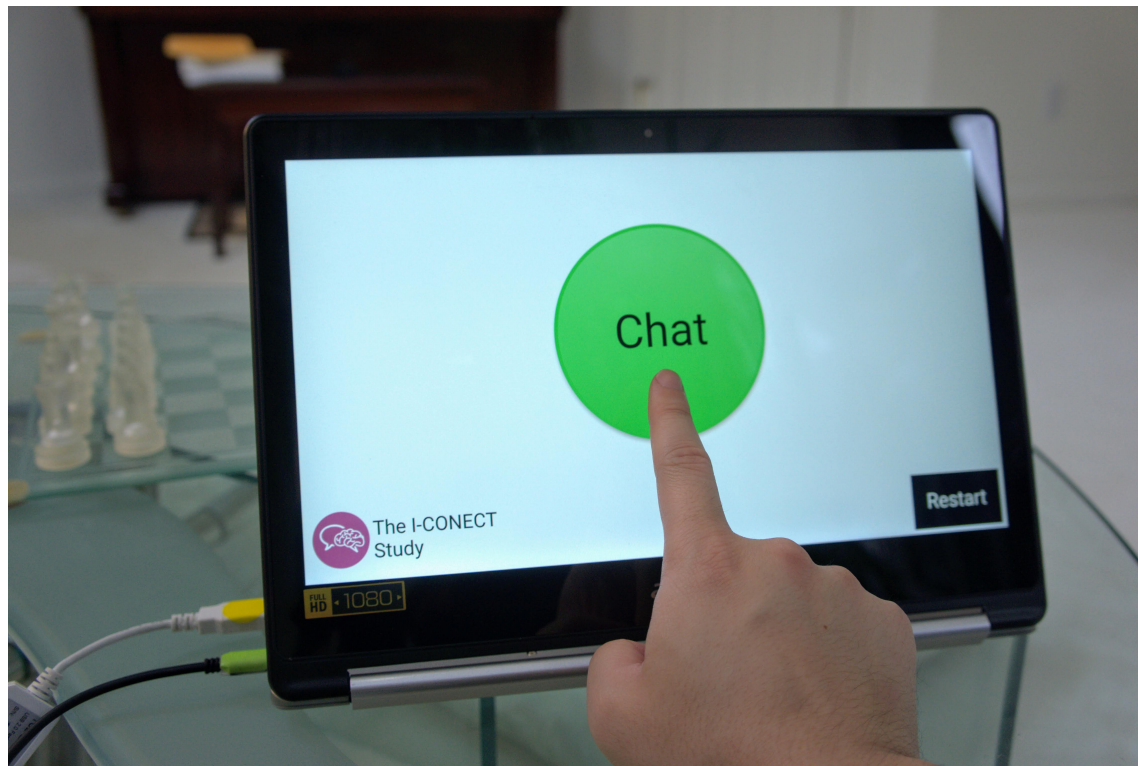
- Changes to the layout and API
- Removal or addition of features
- Firmware updates that change hardware functions

WHAT WE LEARNED MAKING THE APP

Other issues beyond our control

- Reliance on third party services can have an impact on everything.

CONDUCTING VIDEO CHATS



HOW DO CHATS WORK?

- I-PANAS-SF
 - International Positive and Negative Affect Schedule Short Form
 - Serves as a standardization metric across interviewers (pre-post changes)
 - First chat of each week
 - Conducted at the beginning and end of chat
- Semi-structured: Themes & Topic with crafted questions for assistance
 - Over 150 themes, including:
 - Historical events
 - Philosophical ideas
 - Social issues
 - Activities and travel
- Questions aim to hit 3 cognitive levels:
 - Semantic Memory
 - Episodic Memory
 - Executive Functioning

INSPIRED

To what extent do you feel INSPIRED right now?

1	2	3	4	5
Very Slightly or Not at all	A little	Moderately	Quite a bit	Extremely

I-CONNECT

Internet-based Conversational
Engagement Clinical Trial

THEME:
World Wonders



National Institute
on Aging



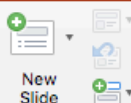
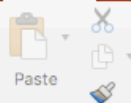
Which topic would you like to start with today?

- The Pyramids
- Stonehenge
- Taj Mahal



"Please describe the picture you see."





Calibri (Body)

12

A A



B

I

U

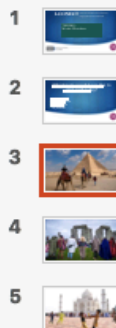
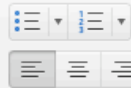
abc

X²X₂

A↕V

A↕a

A

**Topic:**

The Pyramids

Picture Caption:

A group of people ride camels on their Egypt Pyramids Tour.

Facts:

- The pyramids were built by paid laborers, not slaves.
- Sudan has more pyramids than Egypt.
- The world's largest pyramid by volume is the Great Pyramid of Cholula in Puebla, Mexico.

Possible Questions:**(SM)**

What are some things you associate with Egyptian culture?

What other landmarks are in Egypt (ex: Nile River, Suez Canal, etc.)?

Can you name some famous movies involving Egyptian myths/cultures (ex: The Mummy, Cleopatra, etc.)?

(EP)

Have you ever seen a movie based on the pyramids? What was it? What did you think about it?

Have you ever seen a mummy or Ancient Egyptian artifacts at a museum exhibit? What was that like?

Do you remember learning about King Tut in school? What do you remember about him?

(EX)

How do you think the builders of the pyramids influenced modern technology and construction?

Do you think it's acceptable for archeologists to remove artifacts from the tombs? Is there information we can gain from this? Why/Why not?

The Ancient Egyptians believed in preparing bodies for the eternal afterlife by artificial mummification and burying them with treasures. What do you think about that?

Source URLs for Facts:<https://www.factslides.com/k-pyramids><http://www.sciencekids.co.nz/sciencefacts/engineering/pyramids.html>**Image Attribution:**

Author: Jonathan Look, 03/19/2018.

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Use: I-CONNECT, which is sponsored by the National Institute on Aging.

Source: <https://lifepart2.com/pictures-of-egyptian-pyramids/>

HOW DO CHATS WORK?

Naturalistic Flow Fuels Meaningful Interaction

- Scripted vs. Unscripted
- Participant Topic Preference

Targeted Conversation Balance

- 60-80% participant, 20-40% staff
(using word counts)

Impact on Participants and Staff

- Handling Difficult Conversations as Researchers
 - Grief
 - Traumatic Memories



PRELIMINARY FINDINGS

Quantitative

- Overall Impact
 - Majority of those who have completed the intervention reported chats having a positive impact.
 - One participant reported neutral impact.
 - No participants have reported a negative impact.
 - 2/3 of participants who have completed the intervention reported preferring chats 4x/wk over 2x/wk.

Qualitative

- Technology - Easy to use, increased curiosity, and increased confidence in tech skills.
- Structure - Scheduled activities provided motivation for the day.
- Interpersonal Skills - More inclined to strike up conversations.
- Cognitive Stimulation - Memory recall, cognitive tricks, new knowledge.
- Increased Confidence - Ability to talk to different people of different backgrounds.

FUTURE CONSIDERATIONS FOR CLINICAL PURPOSES

Tailoring Interactions to Participant Needs

- Longer vs. shorter chats
- More frequent vs. less frequent
- Flexible schedule and flexible chats
- Chat with other older adults

Utilize Other Forms of Standardized Measurements

- Mental and physical health indicators

Engage Other Professions

- Gerontologists
- Social Workers
- Counselors
- Students

UNEXPECTED IMPORTANCE DURING A PANDEMIC

“Hello!

It's so nice to talk with you.

You're the first person I've talked to all week and I'm
stuck in this house all alone.”

- I-CONNECT Participant

March 23, 2020

QUESTIONS?



REFERENCES

1. Holt-Lundstad, J. (2017). The potential public health relevance of social isolation and loneliness: Prevalence, epidemiology, and risk factors. *Public Policy & Aging Report*, 27(4), pp. 127-130. Doi: <https://doi.org/10.1093/ppar/prx030>
2. Berwick, D., Holt-Lundstad, J., Caruso, R. (2018, October 15). *The Health Impact of Loneliness: Emerging Evidence and Interventions* [Video]. *The National Institute for Health Care Management (NIHCM) Foundation*. Retrieved from <https://www.nihcm.org/categories/the-health-impact-of-loneliness-emerging-evidence-and-interventions>
3. Baer, R. (n.d.) An African-American woman looking out a window. [Photograph]. *National Cancer Institute*. Retrieved on April 2, 2020 from <http://www.freestockphotos.biz/stockphoto/17075>