

# Remote Hearing Aid Support: The Next Frontier

Gina Angley, AuD

Associate Director, Adult Amplification Program

Vanderbilt University School of Medicine

# Disclosure

- Funding and equipment for both phases of this study were provided by Phonak, AG

# Acknowledgements

- Phonak, AG
  - Jean Anne Jordan, AuD
  - Martina Wolf
  - Michael Boretzki, PhD
  - Stefan Launer, Ph.D.
- Bill Dickinson, AuD
- Gurjit Singh, Ph.D.

# What is telehealth?

- Cardiology monitoring
- Mental health counseling
- Speech therapy

# Telehealth in Audiology

- **Diagnostics**

- Swanepoel, de W. & Hall, J.W. 3rd (2010); Crowell, E.S., Givens, G.D., Jones, G.L., Brechtelsbauer, P.B., Yao, J. (2011); Krumm, M. & Syms, M.J. (2011)

- **Hearing Aid Fittings**

- Ferrari, D.V. & Bernardez-Braga, G.R. (2009); Campos, P.D. & Ferrari, D.V. (2012)

# Study Design

- In-Clinic
  - Conducted within Vanderbilt Medical Center
- In-Home
  - Conducted in participant's home

# In-Clinic: Research Questions

- Are remote hearing aid follow-up appointments feasible?
- What are the perceived benefits of remote hearing aid follow-up care?

# In-Clinic Appointments

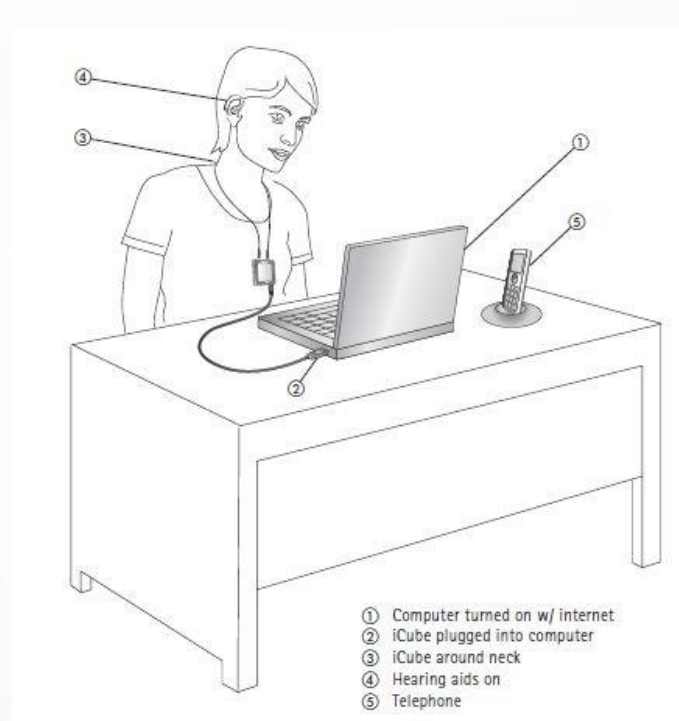
- 50 participants
- Average Age: 64.4 years
- Average Travel Time: 32.09 Miles/37.46 Minutes
- Mild to profound hearing losses of all types



# In-Clinic Appointments

- Pre-evaluation
- Equipment and Materials
- Participant had to express concerns
- Procedure

# In-Clinic Appointments

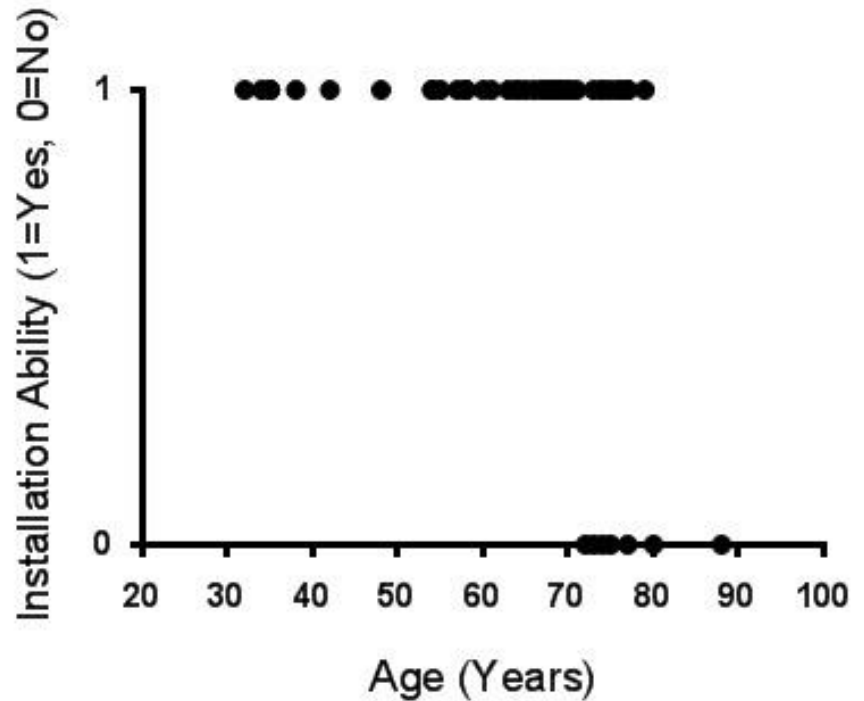


# In-Clinic Appointments: Results

- “How would you rate your computer skills?”
  - 22% Beginner
  - 52% Average
  - 16% Advanced
  - 10% Expert

# In-Clinic Appointments: Results

- 82% were able to install the software with no assistance



# In-Clinic Appointments: Results

- Connection between hearing aids and software was stable for 86% of appointments
- In-Clinic Professional Assessment
  - 80% of appointments were as efficient
  - Satisfied with 82% of appointments

# In-Clinic Appointments: Results

- In-Clinic Client Assessment:
  - Strengths
    - Time savings
    - Convenience
    - Reduced travel costs
  - Weaknesses
    - Lack of face-to-face time
    - Computer and software issues

# In-Clinic Appointments: Results

- In-Clinic Client Assessment:
  - 88% of participants would prefer DS appointments under difficult conditions
  - 92% would recommend DS appointments to others
  - 64% would prefer DS appointments, if possible

- In-Clinic Appointments – It Works!!
- In-Home Appointments
  - Conducted in participant's home
  - Variable internet connections
  - Various operating systems



# In-Home Appointments: Research Questions

- Will it still work if the participant is at home?
- Is there added benefit with the addition of a web camera?
- Are the examiner and the participant still satisfied with the appointment?

# In-Home Appointments:

- 22 participants
- Average Age : 61.52 years
- Average total time: 72 minutes
  - Driving time plus waiting room time

# In-Home Appointments

- Equipment and Materials
  - Same as In-Clinic appointments
  - Addition of a web camera
  - “Feelings About Computers” questionnaire
    - Adapted from Wild et al (2012)
- Procedure Overview

# In-Home Appointments: Results

- 82% of participants installed the software without assistance.
- Web camera successful for 77% of appointments
- In-Home Client Assessment

# Future Research

- How can you prefer something with only a single exposure?
- Return to addressing participant concerns

# What did we learn?

- It works!
- The following considerations should be made:
  - Instruction manuals
  - Backup communication
  - Internet connection and inclement weather

# What did we learn?

- Patient benefits
  - Time, convenience, and cost savings
  - Can now program hearing aids with the patient in different environments
- Clinician benefits
  - May be more effective in our programming and counseling
  - Can work from anywhere

# What did we learn?

- Patient limitations
  - Requires stable access to the internet/phone service
  - May require an additional appointment
- Clinician limitations
  - Cannot touch and check all components of the hearing aid
  - Rely on patient's ability to manipulate and show you the hearing aid



# Set-Up Considerations

- Space considerations
- Have a secondary form of communication
- Dual monitors, if possible

# Appointment Considerations

- Support staff to help with orientation and/or installation
- Introduce everyone in the room
- Check-in process

# Appointment Considerations

- Practice, practice, practice with the camera!
- Be mindful of facial expressions
- Talk...A LOT!

Thank you for your time!

[gina.p.angley@vumc.org](mailto:gina.p.angley@vumc.org)