

# Enhanced Communication for Adults with Hearing Loss through a Professionally-Guided Self-Tutorial Approach

Preliminary Findings

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So what can make the difference between the Traversers on the left and the Websters?



Can we be agents of a greater change?



# Aided Threshold Goals

***Average Hearing Threshold dB HL + Average Aided Real Ear Gain = Aided Threshold Goal (dB HL)***

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<b><i>Descriptor (dB HL)</i></b>	<b><i>Gain</i></b>	<b><i>Goal</i></b>
• -10 to 15 Normal	NA	NA
• 16 to 25 Slight	4 to 10	12 to 15
• 26 to 40 Mild	10 to 20	16 to 20
• 41 to 55 Moderate	20 to 30	21 to 25
• 56 to 70 Mod/Severe	30 to 40	26 to 30
• 71 to 90 Severe	40 to 50	31 to 45
• 91+ Profound	46+	45 to 55

# Hearing Loss Complaints

- Dominating the conversation
- Not paying attention
- Hears only what he wants to hear
- Need to be more assertive
- Continued irritation and frustration
- Surviving family holidays
- Needing to repeat all of the time
- Spouse speaks with her head in the fridge
- Dealing with isolation
- Feeling dumb or incompetent
- Losing friends
- Hearing with multiple conversations
- Dealing with anger because of hearing problems
- . . . And much more

# The Need for AR in Audiology

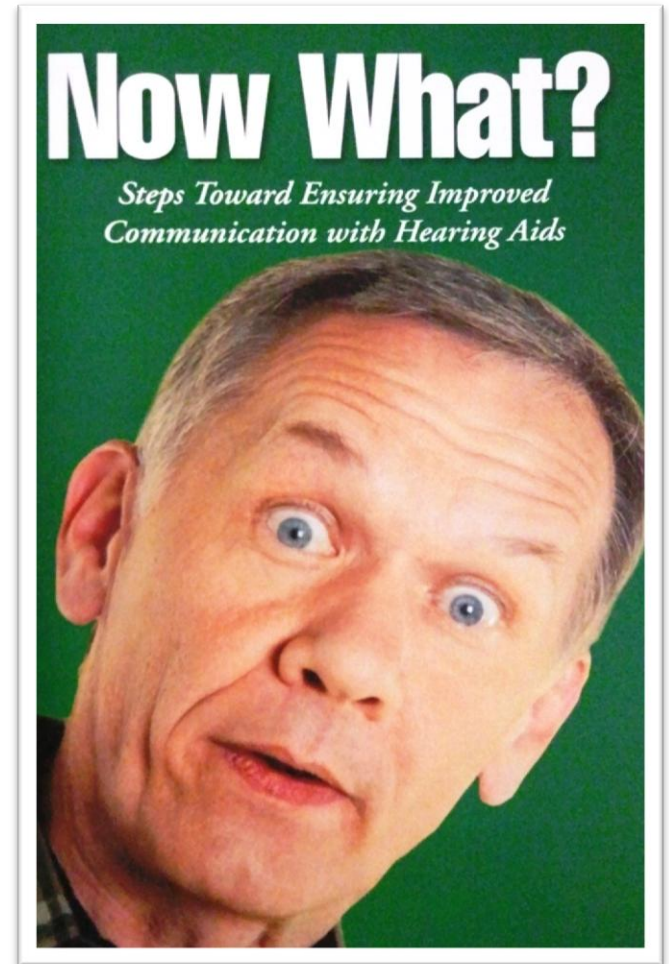
- AR is part of ethical patient care.
  - American Academy of Audiology (AAA) includes adult audiologic counseling in practice guidelines
    - Improved Quality of Life (QoL) measures
    - Increased communication function
  - Professional code of ethics requires provision of more comprehensive services
- Element of high quality hearing healthcare

# The question?

- Can an efficient, time-sensitive, introduction to communication management, given within the confines of the standard hearing aid fitting paradigm, provide meaningful improvement in one's life with hearing loss?

# “Professionally-Guided Self-Tutorial” Program

- 32-page booklet for use during regularly-scheduled appointments:
  1. Initial hearing aid (HA) evaluation
  2. HA fit
  3. First HA follow-up



*Now What? cover*

# “Professionally-Guided Self-Tutorial” focuses on two of the four sections of the *Now What?* booklet

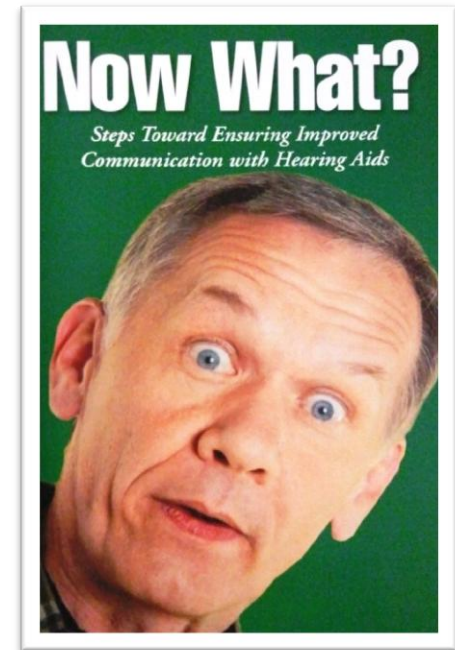
- 4 short sections:

- Part I:** Adjusting to HAs

- Part II:** **Why communication fails**

- Part III:** **Breaking the cycle**

- Part IV:** Additional help and follow-up



*Now What? cover*

Audiologists are provided points for 4-7 minute discussions on 2 readings assigned to patients.



# “Professionally-Guided Self-Tutorial” Program

## Communication Training schedule for audiologists:

<b>Appointment:</b>	<b>Action:</b>	<b>Example Discussion Topics:</b>
<b>Initial HA Evaluation:</b>	Assign Part III.	<i>“I truly believe you will do well with hearing aids, but I want to remind you of something you already know: hearing aids cannot fully restore your hearing. To give you the best hearing benefits, I have some homework for you before you return...”</i>
<b>HA Fit:</b>	Discuss Part III. Assign Part II.	<i>“Did you have a chance to read the pages I asked you to read? Have you started using any of the communication strategies or follow the instruction on forming new communication habits? How is that working for you?”</i>
<b>First Follow-Up:</b>	Discuss Part II.	<i>“How is your mastery of better communication suggestions coming? Have you begun to modify the environment to make conversation easier? What did you think about the part of the booklet on telling others you have a hearing loss? Do you do that now?”</i>

# Methodology

- **Participants**
  - 7 Adults
    - 5 males, 2 females
    - 5 new HA users, 2 previous HA users
    - No communication partners came to both the initial evaluation and follow-up appointments
- **Inclusion criteria:**
  - Between 50-79 years of age
  - Voluntarily pursued hearing aids apart from this study at participating clinics
  - Presented with documented, adult-onset sensory/neural hearing loss (vPTA  $\leq$  75 dB HL)
  - Demonstrated English literacy and adequate vision, or the ability to listen to spoken English
  - Had no known medical conditions leading to reduced cognitive ability

# Methodology

- **Outcome measures**

- 2 questionnaires made for this study
  - 10-15 minutes required to fill out both
- Score assessment compared individual participant *change* from onset of first appointment to immediate post-fitting hearing aid follow-up
- Paper and pencil format
- Participants filled out questionnaires without audiologist present

# Methodology

- Participants were pre-randomized into experimental and control groups
  - Control participants received standard services at their chosen clinic.
  - Experimental participants received a supplemental training program in addition to standard services at their chosen clinic.
- All participants filled out both questionnaires as pre-tests at the initial evaluation and as post-tests at the end of the first follow-up visit

- **Hearing Loss Questionnaire (HLQ)**
  - 20 questions
  - Likert scale 0-10 on degree of perceived hearing loss impact
    - Emotional impact
    - Social impact
    - Attitudes toward hearing loss
    - Quality of life
    - Communication strategies use
  - 0-200 points possible (higher score = higher impact)
- Based on accepted self-assessment measures:
  - Hearing Handicap for the Elderly/Adult (HHIE/A)
  - Communication Scale for Older Adults (CSOA)
  - International Outcomes Inventory for Hearing Aids (IOI-HA)
  - Attitudes for Loss of Hearing Questionnaire (ALHQ)
  - Self-Assessment of Communication (SAC)

# Hearing Loss Questionnaire (HLQ)

## Hearing Loss Questionnaire

Today's Date: 5-11-12 Date of Birth: 1-1-57

Please read each question or statement, and then rank your response along the never-sometimes-always continuum. Please answer all questions. If a question does not relate to you, try to answer as if you were in that situation.

	Almost Never	Sometimes	Almost Always								
1 You are out and cannot understand someone who is talking. You ask him/her to repeat the comment. After requesting two or three repetitions, do you pretend to understand?	0	1	2	3	4	5	6	7	8	9	10
2 You are at a holiday dinner. You can't understand the conversation because everyone is talking at once. However, you don't say anything because you don't want to interrupt the conversation.	0	1	2	3	4	5	6	7	8	9	10
3 You are listening to a discussion on a subject of great interest, but the speaker is talking too fast for you to understand. After failing to keep up, you tune out the discussion.	0	1	2	3	4	5	6	7	8	9	10
4 My primary communication partner gets my attention before speaking to me.	0	1	2	3	4	5	6	7	8	9	10
5 People treat me like an unintelligent person based on my current communication abilities.	0	1	2	3	4	5	6	7	8	9	10
6 I get annoyed when people shout at me because of my current communication abilities.	0	1	2	3	4	5	6	7	8	9	10
7 My Communication Partner thinks I could communicate better if I just tried harder.	0	1	2	3	4	5	6	7	8	9	10

Research Team use only: [ e / n ]

Pre Post Post6 Post12

**44 points**

# Hearing Loss Questionnaire (HLQ)

## Hearing Loss Questionnaire

Today's Date: 5-22-12 Date of Birth: 1-1-57

Please read each question or statement, and then rank your response along the never-sometimes-always continuum. Please answer all questions. If a question does not relate to you, try to answer as if you were in that situation.

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7 My Communication Partner thinks I could communicate better if I just tried harder.	0	1	2	3	4	5	6	7	8	9	10

Research Team use only: [ e / n ]

ID#: \_\_\_\_\_  
Pre Post Post6 Post12

**34 points (-10)**

- **Knowledge Base Questionnaire (KBQ)**
  - 9 questions
  - Free response on communication management awareness and use
  - Specific listening environments, resources beyond HAs, tendency to tell others about hearing needs
  - Point range = variable
    - Higher score = greater functional ability
    - 1 point for each appropriate strategy listed
    - 1 extra point for each appropriate strategy *used*
    - Pre-test answers (baseline) were counted on post-test measures
- Variability controlled by assessing individual pre to post change, not raw point value
- Inter-rater reliability controlled by randomized scoring comparisons between two scorers



# Knowledge Base Questionnaire (KBQ)

2 What strategies help increase understanding in a meeting or group discussion? Draw a checkmark next to your answers that you personally use.

✓ sit close to speaker

3 What strategies help increase understanding if you are having trouble hearing one other person? Draw a checkmark next to your answers that you personally use.

✓ watch mouth

4 What strategies help increase understanding at the cinema, theater or in a religious service? Draw a checkmark next to your answers that you personally use.

I don't know.

5 What strategies help increase understanding speech in a noisy area? Draw a checkmark next to your answers that you personally use.

Hearing aids

Research Team use only: [ e / n ]

ID#:

Pre

Post

Post6

Post12

4 points

# Knowledge Base Questionnaire (KBQ)

2 What strategies help increase understanding in a meeting or group discussion? Draw a checkmark next to your answers that you personally use.

✓ Ask members to speak one-at-a-time

✓ sit close to speaker

3 What strategies help increase understanding if you are having trouble hearing one other person? Draw a checkmark next to your answers that you personally use.

✓ watch facial expressions

✓ ask speaker to rephrase  
signal speaker to slow down

4 What strategies help increase understanding at the cinema, theater or in a religious service? Draw a checkmark next to your answers that you personally use.

Don't know.

5 What strategies help increase understanding speech in a noisy area? Draw a checkmark next to your answers that you personally use.

Move away from noise

Good lighting

Research Team use only: [ e / n ]

ID#: \_\_\_\_\_  
Pre  Post  Post6  Post12

**11 points (+7)**

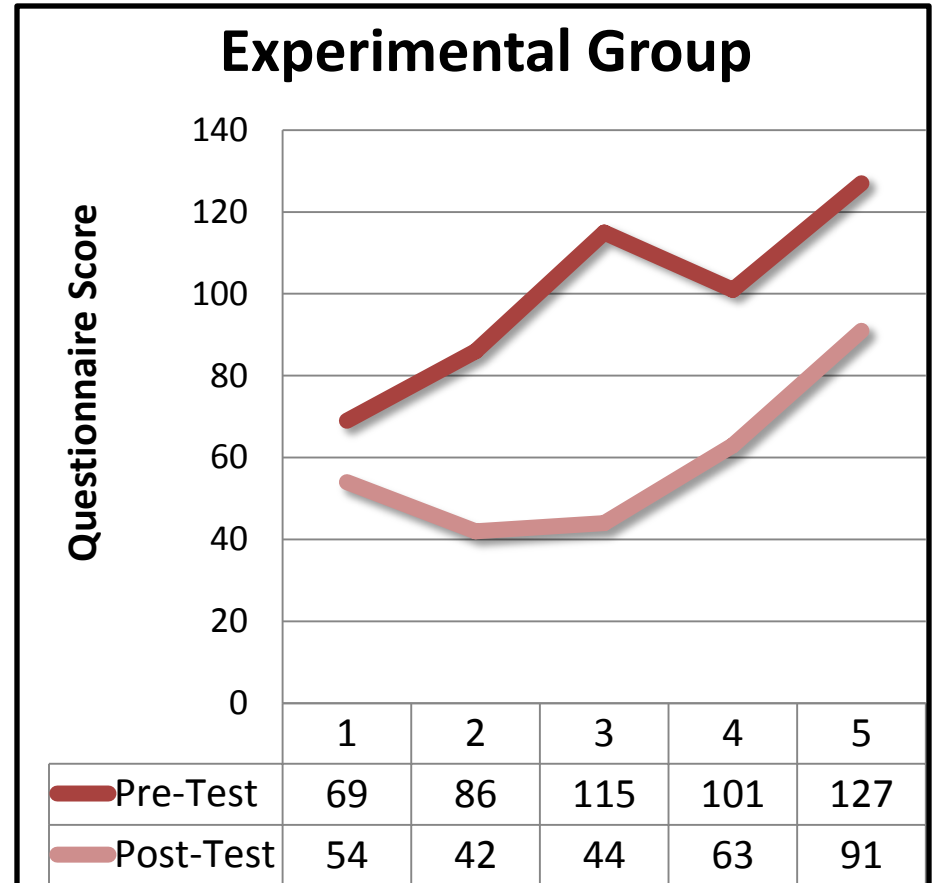
# Results

- Due to limited participant numbers, only experimental group pre- and post-test outcomes were analyzed by a paired t-test for means at this time.
- However, preliminary data for the experimental group does appear significant.
- With a larger sample size, we will be able to compare this significance against the control group.
- Data collection remains in progress.

# Hearing Loss Questionnaire (HLQ)

All 5 experimental subjects showed a decrease in perceived hearing loss impact across pre- and post-test measures.

Average decrease  
40.8 points  
(Range: 15 – 71)

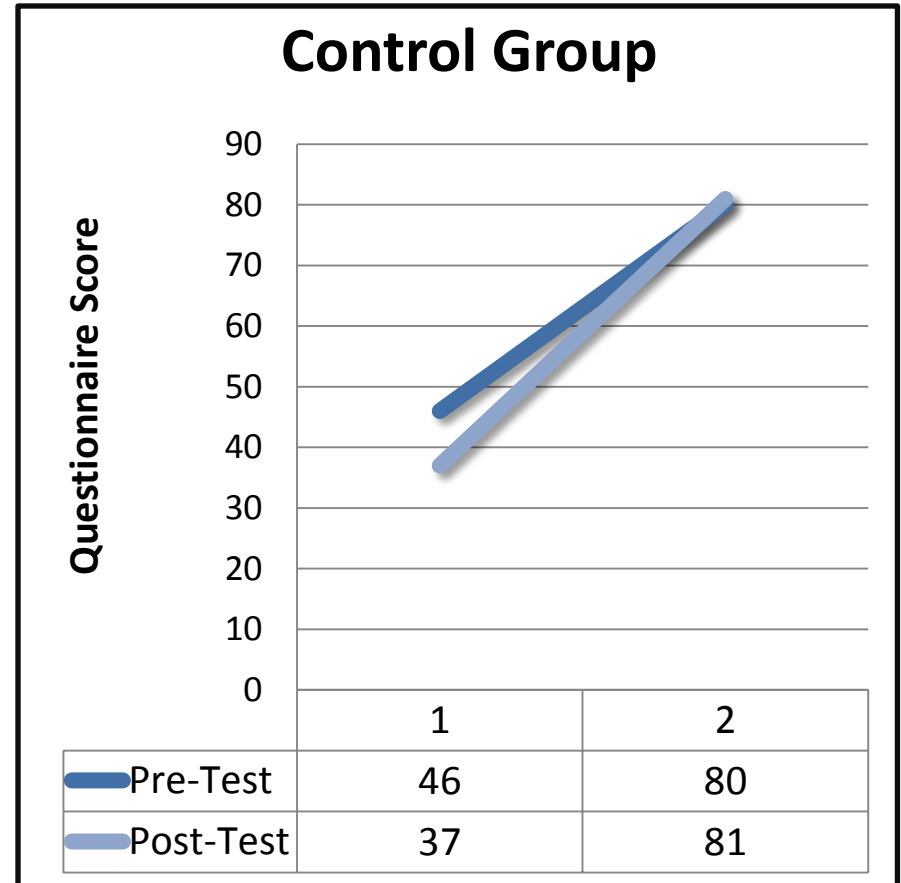


# Hearing Loss Questionnaire (HLQ)

Each control participant appears to show little change across pre- and post-test measures.

Average decrease  
4 points

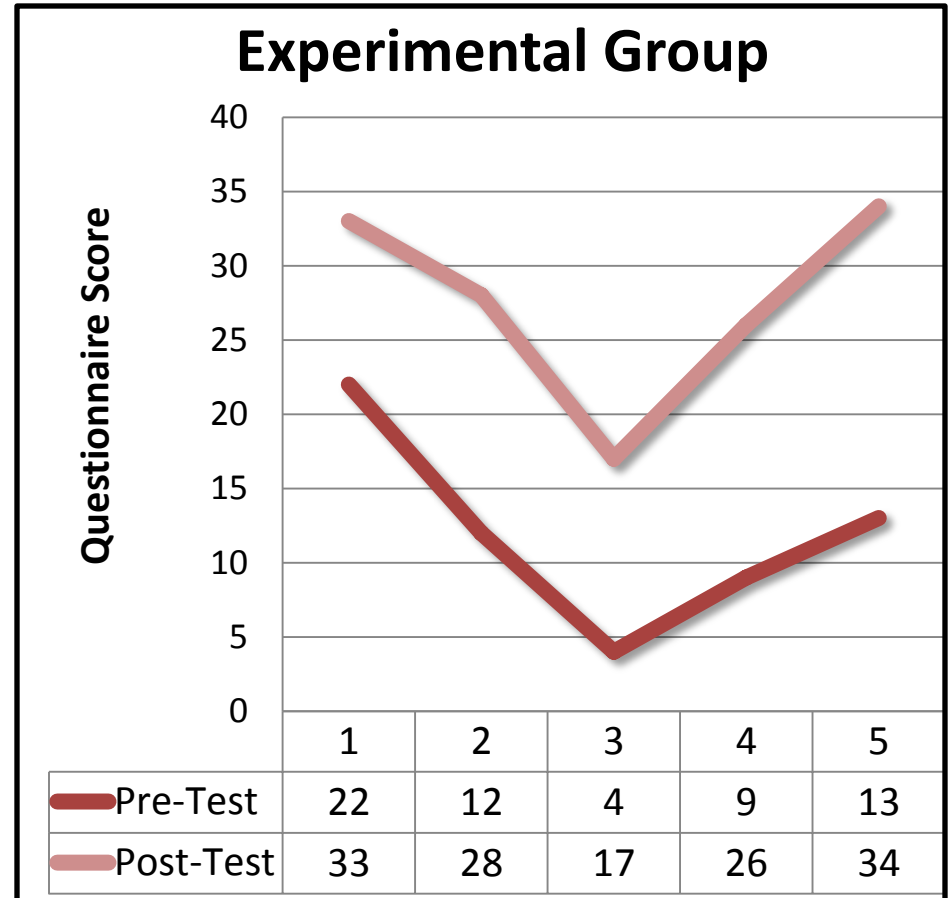
Statistical analysis will require a larger sample size.



# Knowledge Base Questionnaire (KBQ)

All 5 experimental subjects showed an increase in communication management ability across pre- and post-test measures.

Average increase  
15.6 points

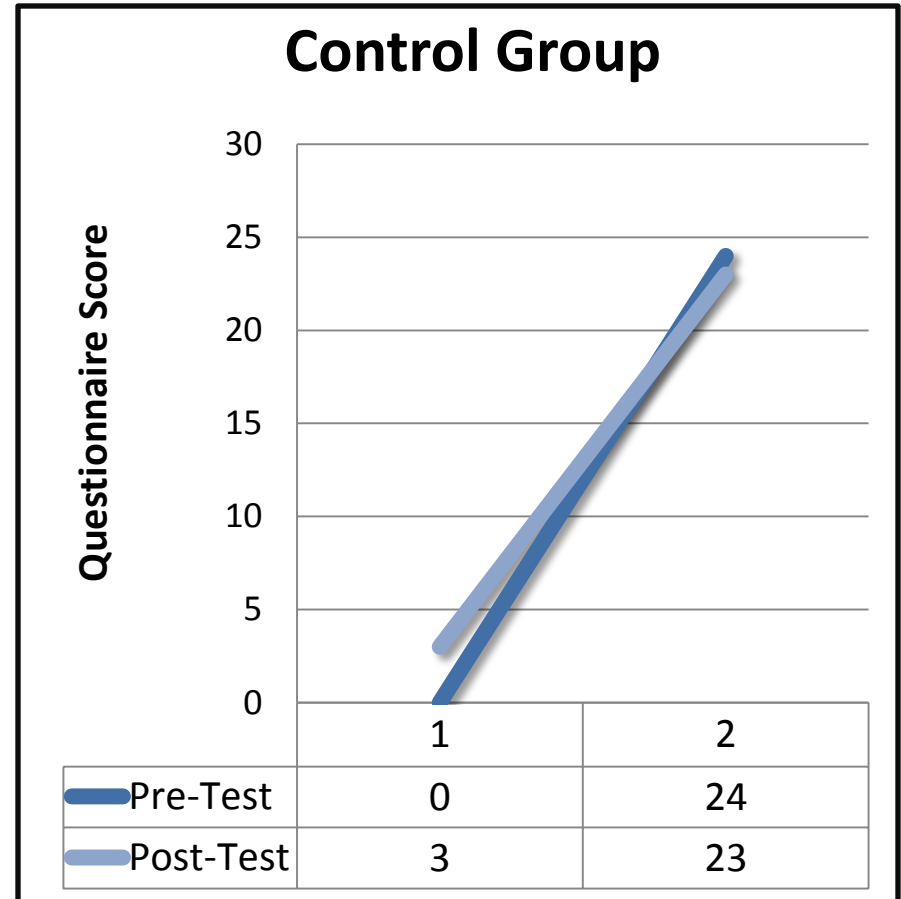


# Knowledge Base Questionnaire (KBQ)

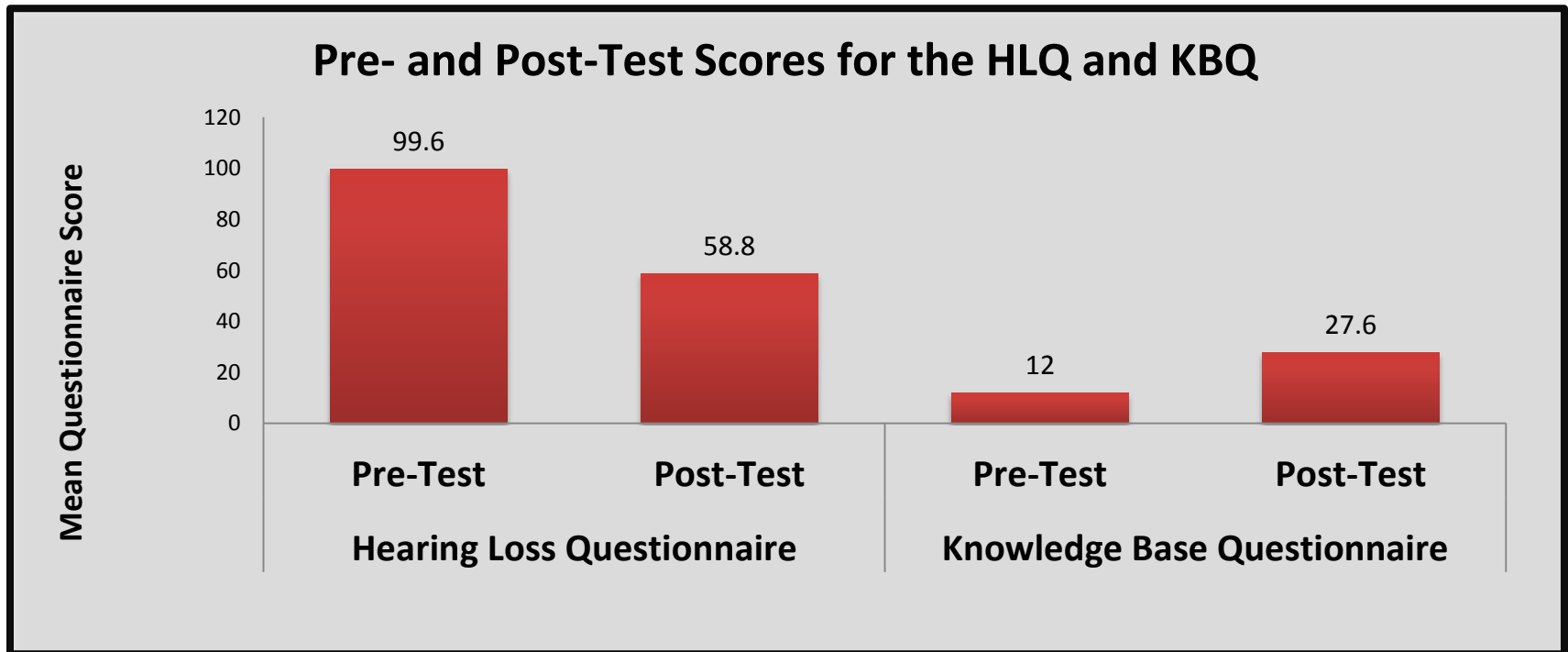
Each control participant appears to show little change across pre- and post-test measures.

Average increase  
0.5 points

Statistical analysis will require a larger sample size.



# Mean Experimental Group Results



*Experimental Group only. n=5. Paired t-test, 4 df, p<0.005.*

The observed *decrease* in perceived hearing loss impact and *increase* in communication management ability in those individuals receiving the training program was significant.



# Discussion

- Further support of the current trend would suggest that a professionally-guided self-tutorial program can be a justifiable and efficient tool.
  - Resource-sensitive
    - Time, space, clinician training
    - Low-cost materials
    - Possible indirect reimbursement
  - More comprehensive care in audiology
    - Supplements amplification
    - Educates any adult with hearing loss who can read or understand spoken English
    - Addresses the communication partner
    - Creates a platform for patient-centered counseling
  - Empowers the patient to have an active role in the rehabilitative process

- How does one determine program success?
  - Evidence-based practice
  - Success stories
    - “We didn’t have an argument all week.”
    - “My husband needs to read this, too. Can I have an extra copy?”
  - Most participating clinicians say the program itself is easy and beneficial but the study logistics create an artificial setting.
  - A professionally-guided self-tutorial AR program is possible to use in a fast-paced Ear Nose & Throat (ENT) clinical setting.