Implementing a Living Well with Hearing Loss Approach in Clinical Practice with Adults

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Session 0158, Sat 11/19/2011, 3:00 - 3:30

James S. and Dyan Pignatelli/Unisource
Clinical Program in Audiologic Rehabilitation for Adults
University of Arizona Team

Clinical Faculty, Audiology

Department of Speech, Language, and Hearing Sciences
RESEARCH and INSTRUCTIONAL FACULTY (5) STAFF

Doctor of Audiology GRADUATE STUDENTS
Rationale and Description

• World Health Organization emphasizes consideration NOT ONLY of auditory impairment but of the effects on activities limitations and participation restrictions.

• Evidence and ASHA and AAA Best-practice guidelines
Hickson, L. (2009, in J. Montano and J. Spitzer) reviewed the application of Evidence-Based Practice in Adult Audiologic Rehabilitation.

Investigations may fall into several categories including:
- Randomized-Controlled Trials
- Cohort Studies
- Case-Control studies
- Expert opinion

This session is a report of our clinical experience - not of a controlled investigation. It assumes best practice for sensory management.

Describe:
- Experience with trial materials and methods for individuals
- Group Living WELL with hearing loss

References are provided at end of presentation on:
- taking a holistic approach with adults with acquired hearing loss
- inclusion of an AR component in HA fittings with adults
- Audiologic Rehabilitation groups
Living WELL with Hearing Loss Approach: Multifaceted and Individualized

FACTORS:

- CLIENT/FAMILY/SIGNIFICANT OTHER:
  - Individual components
  - Group components

- CLINICIAN:
  - Personality and style

- ENVIRONMENT:
  - Type of clinic
Campus Hearing Clinic:
- 3 full-time audiologists
- 1 AuD extern
- Doctor of Audiology student clinicians (~ 24 to 30)
- Private pay
- Hearing Aid bank (low-income)
- Vocational Rehabilitation/VA
- Portion of audiologic rehabilitation program externally funded (Unisource/Pignatelli AR program for adults)

Individual approach: Clinic Appointments
Group approach: Living WELL with Hearing Loss on-campus group program
Services are inter-related and complementary
INDIVIDUAL PLANNING AND IMPLEMENTATION
Underlying basis:
Audiologic Rehabilitation is not an add on

(Robert Sweetow, ARA, 2009)
# Integration of AR
(Combined with Diagnostics and Sensory Management)

<table>
<thead>
<tr>
<th><strong>Individual:</strong></th>
<th><strong>Group:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation of patients to LWHL philosophy</td>
<td>Integration of group sessions into practice</td>
</tr>
<tr>
<td>Assessment of communication needs and psychosocial impact</td>
<td>Referral to existing groups when unable to conduct own group</td>
</tr>
<tr>
<td>Brochures/handouts</td>
<td>Identification and referral to local and/or national chapters of support organizations</td>
</tr>
<tr>
<td>Books</td>
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<tr>
<td>DVDs</td>
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<tr>
<td>Online resources</td>
<td></td>
</tr>
</tbody>
</table>

[Evidence for inclusion of these components in reference section]
Materials developed by Faculty and Students

Case History

SOAC - for Frequent Comm. Partners

Audiological Evaluation

Communication/Psychosocial Needs Assessment/Discussion

Discussion of Results

Determination of Follow up

Provide Information

Schedule follow up

Check all that apply

Impairment Activities Participation Follow up

None - normal hearing sensitivity AU No activity limitations No participation restrictions

Evaluation

Borderline normal AU Some activity limitations Some participation restrictions Recall 1 year

Mild to moderately severe AU Major activity limitations Major participation restrictions Return if any changes noted

Severe to profound AU ENT consultation

Asymmetric SAC SCORE:______________

Conductive component SOAC SCORE:_____________

Technology

Tinnitus

Hearing Aids recommended, no FU by Pt.

Possible APD based upon self-report in relation to results

Hearing aid selection appointment

Hearing aid fitting appointment

ALDs recommended

Cochlear Implant candidacy evaluation

Hearing Aid Assessment Protocol

Arizona Care Plan

Other_____________________________________

Psychosocial/Educational/Vocational

Provide Communication and Resources brochure

Provide a Living with Hearing Loss Daily Journal

Suggest Richard Carmen book

Individual auditory training program

Counseling re: telephone use

Group Living with Hearing Loss

Group other (technology, for example)

Behavioral Counseling

Refer to Vocational Rehabilitation

Provide information on ADA
Welcome to the University of Arizona Clinic for Adult Hearing Disorders

During your upcoming appointment, you will have:

1) A comprehensive discussion about your hearing and balance and any effects these may be having on your quality of life or communication.

2) An evaluation of your hearing

3) A discussion of the test results and our recommendations for follow up

The University of Arizona Hearing Clinic is a full-service clinic, which includes dispensing and service of most major types of hearing technologies such as hearing aids, cochlear implants, and adaptive devices. We believe that a thorough professional approach for resolution of your hearing issues involves not only technology that is selected well, programmed and maintained properly but also additional counseling about getting along well with hearing loss. You will be invited to join one of our Living (Well) with Hearing Loss classes on campus, and we will provide you with other information on improving your overall communication.

We encourage you to bring along a “frequent communication partner,” for example, a family member or close friend who can share in the information that we provide during your appointment. As you realize, changes in your hearing can also affect those around you.

Before you come in for your appointment, please complete the enclosed forms. These will help to guide our discussion. You may also want to look over our website, which describes our Program for Adults with Hearing Loss in detail (http://sweetow.arizona.edu). You will find general information on hearing, hearing loss and technologies.

Please do not hesitate to contact us at (520) 621-2900 if you have any questions or need to reschedule your appointment. We look forward to meeting you.

Robert Sweetow

*Schow & Nerbonne (2007)
Self-Assessment of Communication (SAC/SOAC)

University of Arizona Hearing Clinic
Self Assessment of Communication (SAC)

Name: ____________________________ Date: __________

Instructions: The purpose of this form is to identify the problems a hearing loss may be causing you. If you have a hearing aid, please fill out the form according to how you communicate when the hearing aids are NOT in use. One of the five descriptions on the right should be assigned to each of the statements below.

Select a number from 1 to 5 next to each statement (please do not answer with yes or no, and pick only one answer for each question.)

1) Almost never (or never)
2) Occasionally (about ¼ of the time)
3) About ½ of the time
4) Frequently (about ½ of the time)
5) Practically always (or always)

(1) Do you experience communication difficulties in situations when speaking with one other person? (at home, at work, in a social situation, with a waitress, a store clerk, with a spouse, boss, etc.)

(2) Do you experience communication difficulties while watching TV and in various types of entertainment? (movies, radio, plays, night clubs, musical instruments, etc.)

(3) Do you experience communication difficulties in situations when conversing with a small group of several persons? (with friends or families, co-workers, in meetings or casual conversations, over dinner or while playing cards, etc.)

(4) Do you experience communication difficulties when you are in an unfavorable listening environment? (at a noisy party, where there is background music, when riding in an auto or bus, when someone whispers or talks from across the room, etc.)

(5) Name a situation where you experience communication difficulties and you most want to hear better. How often does this happen?

(6) Do you feel that any difficulty with hearing negatively affects or hampers your personal or social life?

(7) Do you feel that any problem or difficulty with your hearing worries, annoys, or upsets you?

(8) Do you or others seem to be concerned or annoyed that you have a hearing problem?

(9) How often does hearing loss negatively affect your enjoyment of life?

(10) If you are using a hearing aid: On an average day, how many hours did you use the hearing aids?

Please rate what you feel is your overall satisfaction with the hearing aids.

- not at all satisfied (0%)
- slightly satisfied (25%)
- moderately satisfied (50%)
- mostly satisfied (75%)
- very satisfied (100%)

Adapted from online version
Has an SO version (SOAC) (administered during appointment)

http://www.isu.edu/csed/profile/sac.shtml

Schow & Nerbonne (2007)
SAC & SOAC

• 9-question* assessment analyzing:
  • Disability (Q1-9) (Activity Limitation)
  • Handicap (Q1-5) (Participation Restrictions)
  • Quality of Life (Q9)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>No disability or handicap</td>
</tr>
<tr>
<td>21-40%</td>
<td>Slight hearing disability or handicap</td>
</tr>
<tr>
<td>41-70%</td>
<td>Mild to moderate disability or handicap</td>
</tr>
<tr>
<td>71-100%</td>
<td>Severe hearing disability or handicap</td>
</tr>
</tbody>
</table>

*10th question is on hearing aid use

Client Oriented Scale of Improvement (COSI)

## Case History

### SAC
- Appointment 1
  - Discussion of Case History
  - SOAC - for Frequent Comm. Partners
  - Audiological Evaluation
  - Communication/Psychosocial Needs Assessment/Discussion
  - Discussion of Results
  - Determination of Follow up
  - Provide Information
  - Schedule follow up

### Check all that apply

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Activities</th>
<th>Participation</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>None - normal hearing sensitivity AU</td>
<td>No activity limitations</td>
<td>No participation restrictions</td>
<td>Evaluation</td>
</tr>
<tr>
<td>Borderline normal AU</td>
<td>Some activity limitations</td>
<td>Some participation restrictions</td>
<td>Recall 1 year</td>
</tr>
<tr>
<td>Mild to moderately severe AU</td>
<td>Major activity limitations</td>
<td>Major participation restrictions</td>
<td>Return if any changes noted</td>
</tr>
<tr>
<td>Severe to profound AU</td>
<td></td>
<td></td>
<td>ENT consultation</td>
</tr>
<tr>
<td>Asymmetric</td>
<td>SAC SCORE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conductive component</td>
<td>SOAC SCORE:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tinnitus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible APD based upon self-report in relation to results</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Technology
- Hearing Aids recommended, no FU by Pt.
- Hearing aid selection appointment
- Hearing aid fitting appointment
- ALDs recommended
- Cochlear Implant candidacy evaluation
- Hearing Aid Assessment Protocol
- Arizona Care Plan
- Other

### Psychosocial/Educational/Vocational
- Provide Communication and Resources brochure
- Provide a Living with Hearing Loss Daily Journal
- Suggest Richard Carmen book
- Individual auditory training program
- Counseling re: telephone use
- Group Living with Hearing Loss
- Group other (technology, for example)
- Behavioral Counseling
- Refer to Vocational Rehabilitation
- Provide information on ADA
Other individualized materials

- Hearing Aid Orientation Pamphlet
- Diary/Journal spiral notebook
- Maximizing Communication brochure
Hearing Aid Orientation

Hearing aid Use, Care, and Maintenance

- Wipe your hearing aids with a soft cloth or tissue when you take them off.
- Brush earwax out of the sound-hole of the earmold, dome or hearing aid when you take them off.
- Do not expose your hearing aids to excessive moisture or heat.
- Open the battery doors completely when not using the hearing aids.
- Your batteries are poisonous! Do not store them next to medications. Keep them out of reach of small children and pets.
- Store batteries in a cool, dry place. Do not refrigerate them.

RULE OF THUMB:
The more time you spend using the hearing aids by yourself, the better you will be able to hear people and ignore background noise when you are with people.

University of Arizona
Hearing Clinics

Living Well with Hearing Loss

Programs
changes that happen in the hearing aid when I:  
(e.g., push a button, use the remote, toggle a switch)

My Programs:
1. 
2. 
3. 
4. 

Hearing Aid Use Schedule

<table>
<thead>
<tr>
<th>Day of Use</th>
<th>Minimum Hours of Use</th>
<th>Typical Situations</th>
<th>For You</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>1 hour</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Day 2</td>
<td>2 hours</td>
<td>A, B</td>
<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>3 hours</td>
<td>A, B</td>
<td></td>
</tr>
<tr>
<td>Day 4</td>
<td>3 hours</td>
<td>A, B, C</td>
<td></td>
</tr>
<tr>
<td>Day 5</td>
<td>3 hours</td>
<td>A, B, C, D, E</td>
<td></td>
</tr>
<tr>
<td>Day 6</td>
<td>4 hours</td>
<td>A, B, C, D, E</td>
<td></td>
</tr>
<tr>
<td>Day 7</td>
<td>4 hours</td>
<td>A, B, C, D, E</td>
<td></td>
</tr>
<tr>
<td>Day 8</td>
<td>5 hours</td>
<td>A, B, C, D, E</td>
<td></td>
</tr>
<tr>
<td>Day 9</td>
<td>6 hours</td>
<td>A, B, C, D, E</td>
<td></td>
</tr>
</tbody>
</table>

(adapted from Mormer and Palmer, 1999)
Individual Record and Practice

Clients Participate Actively in Their Own Rehabilitation
Welcome to Living Well with Hearing Loss

Adjusting to hearing loss means adapting to communication challenges in new ways. Breaking old habits can be difficult.

Please use this journal as you observe the communication situations that are difficult for you.

- What made the situation difficult?
  (e.g., Was it noisy? Did the speaker talk too fast?)
- What did you do that made it difficult?
  (e.g., Did you pretend to understand? Did you get frustrated?)
- What did others do that made it difficult?
  (e.g., Did they forget to look at you when they were speaking?)
- What would improve the situation?
  (e.g., Inform the speaker of your hearing loss.)

Please copy your audiogram on this “Audiogram of Familiar Sounds.” Use these guidelines to see what you can and cannot hear.

Sounds that are above your line are sounds that you will have difficulty hearing because they are softer. These sounds will be towards the top of the graph.

Sounds that are below your line are sounds that you will usually be able to hear because they are louder. These sounds will be towards the bottom of the graph.

Includes links to simulators for FCPs/family
### Situations I would like to hear better:
List in order of significance, 1 being the most significant and 5 being the least significant.

Please indicate your current ability in that situation by writing a percentage next to each situation below. (hardly ever=10%, occasionally=25%, half of the time=50%, most of the time=75%, almost always=95%)

**EX:** 1. Conversation in noise with 1 or 2 people, 25%

1. 
2. 
3. 
4. 
5. 

(Examples: Conversation with 1 or 2 in quiet/noise, conversation with a group in quiet/noise, television/radio, familiar/unfamiliar speaker on the phone, cluck, traffic, doorknob, etc.)

[Adapted from NAL Client Oriented Scale of Improvement]

### Situation:
I couldn't hear the cashier at the grocery store.

**This situation was difficult because:** I felt like the cashier was in a hurry and was annoyed by my asking her to repeat herself.

**What I and/or others did:**
1. I started pretending like I could hear what she was saying because asking "what?" over and over again was an annoyance and I was overcharged.

**Improvements:**
1. Tell the cashier that I have a hearing loss and I need her to face me when she is speaking.
2. Ask the cashier to write down the information.

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### Situation:

**This situation was difficult because:**

**What I and/or others did:**

**Improvements:**
**Maximizing Communication**

With Individuals Who Have Hearing Loss

The University of Arizona

For appointments, call (520) 621-7070

http://dhh.arizona.edu

www.idch.arizona.edu

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**Hearing AIDS**

**Reasonable Expectations:**

- Expect to be mostly satisfied with your hearing aids; expect the quality of your life to improve due to your hearing aids.
- Give your hearing aids a chance, being sure to follow the instructions of your audiologist. Most people need a period of adjustment before deriving the maximum benefit from their hearing aids.
- Expect your hearing aids to fit comfortably. Your hearing aid has been designed to fit all background noises. However, your hearing aids may make noisy situations more comfortable.
- Hearing aids should allow you to hear soft sounds (i.e., child’s voice, soft speech) and prevent loud sounds from being too uncomfortable.
- It is normal for hearing aids to whistle when you are inserting them, if this whistling continues after insertion, you may need to re-insert your audiologist.
- Do not expect your friend’s hearing aid brand or style to work for you. Hearing aid selection depends on your hearing loss.
- No matter how technically advanced, in most cases hearing aids cannot restore your hearing to normal.
- Expect your hearing aids to benefit you. Your ability to understand speech should improve (with reasonable expectations) in many of the situations that are important to you.

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**Local Resources**

**Adult Loss of Hearing Association**

www.aloha.org

401 E. Fort Lowell

Tucson, AZ 85712

(520) 579-5067

**Community Outreach Program for the Deaf**

www.copdc.org

208 W. Adams St.

Tucson, AZ 85701

(520) 792-2025

**Living Well with Hearing Loss Group**

www.livingwell.org

(520) 621-7070

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**Internet Resources**

For general information on hearing and balance:

- American Speech-Language Hearing Association
  
  http://www.asha.org/aha/aha/aha/index.cfm

For information on management, treatment, and support for people with tinnitus:

- American Tinnitus Association
  
  http://www.ata.org

For hearing loss simulators for family and friends:

- The Better Hearing Institute
  
  http://www.thebetterhearing.org/hearing-loss/hearing_loss_simulator/index.cfm

For information on advocacy and support of people with hearing loss:

- Hearing Loss Association of America
  
  http://hea.org

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**Communication Strategies:**

For listeners with hearing loss:

- Anticipate difficult situations and plan ahead to minimize problems.
- Tell others that you have a hearing loss and how to best speak to you (e.g. “please face me and speak more slowly”).
- Pay attention to visual cues about the topic being discussed.
- Ask for written clues of key words, if needed.
- Provide specific feedback of what you understand or fail to understand. (e.g., “Instead of asking ‘What?’, let the speaker know what you heard by being specific, ‘What did you say about the bank?’”)
- Do not bluff.
- Provide feedback to the speaker by telling him or her how well he or she is doing in adapting to your communication needs.
- Set realistic goals about what you can expect to understand.
- Know your rights as a person with hearing loss.
- Be patient, positive, and relaxed.

For communication partners:

- Get the person’s attention before you speak.
- Tell the person the topic you begin speaking or when you change topics.
- Speak slowly and at a moderate level.
- Do not put obstacles in front of your face.
- Use facial expressions and gestures.
- When a message is not understood, repeat it once more slowly, then rephrase, using different words or different word order.
- Avoid areas with noticeable background noise, especially for highly important communication.
- Talk to a person with hearing loss, not about him or her, when in a group.
- When in doubt, ask the person with hearing loss for suggestions about how to improve.

For the environment:

- Make sure the room is well lit so you are able to use visual cues.
- Try to communicate in areas with minimal background noise.
- Step outside if you are in a noisy environment and trying to have a face-to-face conversation.
- Eliminate background noise. Turn off the television or radio.
- If a restaurant is noisy, request a table in a quiet area.

**Living Well with Hearing Loss**

We offer small group educational and support programs to provide additional information and topics discussed in this brochure.

- Understanding hearing and hearing loss
- Interpreting your hearing test
- Hearing aids and audiological
- Listed devices
- Strategies to facilitate effective communication
- Your rights as a person with hearing loss

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**To enroll in a Living Well with Hearing Loss group please call:**

520 621-7070
Communication Partners and Information

Hearing Loss Association of America
Video Series:
online or Free DVD
http://www.hearingloss.org/content/video-series-learn-about-hearing-loss

http://www.medifecta.com
$139.00
Additional Resources

The Consumer Handbook on Hearing Loss & Hearing Aids

The Consumer Handbook on Hearing Loss & Hearing Aids
A Bridge to Healing
Third Edition

Edited by Richard E. Carmen, Au.D.

ISBN: 978-09661826-2-0
Hard Cover $24.95
Soft Cover $18.95
Welcome

The University of Arizona Department of Speech, Language, and Hearing Sciences has multiple programs and services for adults with hearing loss. Our clinical faculty members are experienced in all aspects of hearing evaluation and rehabilitation including solutions through technology and our Living with Hearing Loss programs.

Living with Hearing Loss group classes are offered throughout the year. For more information on how to enroll, consult our [GENERAL BROCHURE](#).

Fall, 2011 classes, now enrolling.

**NEWSLETTER:** Living Well with Hearing Loss

**News**

**ALOHA fundraising and telephones**

See the flyer about telephone distribution and the Adult Loss of Hearing Association.

[read more >](#)

**Adult Loss of Hearing Association Newsletter**

Check the latest edition of the ALOHA newsletter. This is a great support organization in our community.

[read more >](#)

"Technology for Better Hearing: Why Wait" - FREE LECTURE

Dr. Frances Harris and Dr. Tom Muller will discuss factors that prevent adults from doing something about their hearing difficulties.

Current advances in hearing aid technology will be...

[read more >](#)
Preliminary Experiences (since summer, 2011)

**Patient letter:** Used 100% of time; frames the clinic delivery model

**SAC and SOAC:** Used 95% (SOAC) -100% (SAC) of time; quantify self-perception and are useful in framing discussion.

**Maximizing Communication brochure:** Used ~ 90% of time. Useful for communication partners, especially when clients don’t attend group. Handed out at various times by different audiologists.

**Hearing Aid Orientation pamphlet:** Used ~ 80% of time, based on audiologist

**Diary:** Used least often of materials

**Recommendations/Modifications:**
- Continue the approach and implementation
- Revise Hearing Aid Orientation and Diary and begin to collect data on implementation
Summary

• Have discussed examples of methods for meeting individual needs – considering ALL of the issues.

• **GROUP:** Based on the evidence and anecdotal reports from participants and communication partners, those who become part of a GROUP derive substantially MORE benefit
LWHL Groups: Content and Implementation

Content:

Educational/Instructional
- Hearing/hearing loss/test results
- Technologies

Psychosocial/Coping/Communication Strategies
- Self-advocacy, coping, communication strategies, sensory integration

Special topics

Duration: 2, 3, 5 week classes

Implementation: (2-hour sessions):

- Power-point presentations
- Information packet
- Interactive exercises
- Homework
- Transitional meeting at ALOHA (5-week group)
- Follow-up outcome measures
- Maintain contact through group emails, newsletters, website
LWHL Groups: Outcome Measures

• **PRE-POST:** Self-Assessment of Communication and SO (website version), paper and pencil format; Pre- and 2-weeks post program completion via self-addressed envelope, mail-in return

• **DURING:** “Name 3 things you remember from last week”

• **POST:** Course Evaluation Form (5-point rating scale + comments)

• **POST:** International Outcome Inventory-Alternative Interventions (AI), and SO versions, paper and pencil, modified with “Living with Hearing Loss Class”. 2-weeks post.

  (Noble, 2002; Hickson et al. 2006)
## Group Approach: Organization (F09 – S11)

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of participants (PHL)</th>
<th>Number of FCPs</th>
<th>Number of Student Clinicians</th>
<th>Average group size</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-week (4 groups)</td>
<td>28</td>
<td>18</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>( n = 46 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-week (9 groups)</td>
<td>98</td>
<td>75</td>
<td>5</td>
<td>19</td>
</tr>
<tr>
<td>( n = 173 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-week (11 groups)</td>
<td>70</td>
<td>47</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>( n = 117 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>196</strong></td>
<td><strong>140</strong></td>
<td><strong>22+</strong></td>
<td></td>
</tr>
<tr>
<td>( N = 336 )</td>
<td></td>
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</tr>
</tbody>
</table>
## LWHL Groups: Demographics

- **n = 196 participants (PHL)**
- **Mean Age:** 74 years
- **Range:** 38 to 96 years
- **Gender:** 113 men; 83 women

<table>
<thead>
<tr>
<th>PTA (dB HL) of better ear</th>
<th>2 Wk</th>
<th>3 Wk</th>
<th>5 Wk</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>36</td>
<td>27</td>
<td>10</td>
<td>72</td>
</tr>
<tr>
<td>Moderate</td>
<td>20</td>
<td>15</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Moderately Severe</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Severe</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Profound</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>63</td>
<td>53</td>
<td>21</td>
<td>137</td>
</tr>
</tbody>
</table>

82%
Mean Audiometric Configuration

Frequency kHz

0.25 0.5 0.1 0.2 0.3 0.4 0.6 0.8

n = 137

dB HL
Hearing Aid/CI Users

Hearing Aids/CI: 77%
No Hearing Aids: 23%
Outcome Measures 2-week and 3-week groups

• SAC and SOAC, administered before intervention and 2-weeks post intervention (mail in)

• International Outcome Inventory, Alternative Interventions (IOI-AI and SO versions), post test only

• Returned by mail, return rate = 54% (2-week); 63%, 3-week

• Course evaluation and “three things” completed during class
### SAC and SOAC

Higher score = **GREATER** the effect of the hearing loss

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>No disability or handicap</td>
</tr>
<tr>
<td>21-40%</td>
<td>Slight hearing disability or handicap</td>
</tr>
<tr>
<td>41-70%</td>
<td>Mild to moderate disability or handicap</td>
</tr>
<tr>
<td>71-100%</td>
<td>Severe hearing disability or handicap</td>
</tr>
</tbody>
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**Instructions:**
The purpose of this form is to identify the problems a hearing loss may be causing. If you have a hearing aid, please fill out the form according to how you communicate when the hearing aids are **NOT in use**. One of the five descriptions on the right should be assigned to each of the statements below.

**Select a number from 1 to 5 next to each statement (please do not answer with yes or no, and pick only one answer for each question):**

1. Do you experience communication difficulties in situations when speaking with one other person? (at home, at work, in a social situation, with a waitress, a store clerk, with a spouse, boss, etc.)
2. Do you experience communication difficulties while watching TV and in various types of entertainment? (movies, radio, plays, night clubs, musical instruments, etc.)
3. Do you experience communication difficulties in situations when conversing with a small group of several persons? (with friends or families, co-workers, in meetings or casual conversations, over dinner or while playing cards, etc.)
4. Do you experience communication difficulties when you are in an unfavorable listening environment? (at a noisy party, where there is background music, when riding in an auto or bus, when someone whispers or talks from across the room, etc.)
5. How often do you experience communication difficulties in the situation where you most want to hear better? Situation:
6. Do you feel that any difficulty with hearing negatively affects or hampers your personal or social life?
7. Do you feel that any problem or difficulty with your hearing worries, annoys, or upsets you?
8. Do you or others seem to be concerned or annoyed that you have a hearing problem?
9. How often does hearing loss negatively affect your enjoyment of life?
10. If you are using a hearing aid: On an average day, how many hours did you use the hearing aid? Hours __________

Please rate what you feel is your overall satisfaction with the hearing aids:

1. Not at all satisfied (0%)
2. Slightly satisfied (25%)
3. Moderately satisfied (50%)
4. Mostly satisfied (75%)
5. Very satisfied (100%)
Self-Assessment of Communication (SAC) and PTA

Severe disability

No disability

SAC – total score

Pure-tone average (dB HL, 3 frequency, better ear)

Group
- 2-week
- 3-week
- 5-week

n = 132

r = 0.53, p < 0.001
SAC and SOAC – Start of Group

**SOAC total score, pre**

- **n = 121**
- **r = 0.34, p < 0.001**

- 2-week (n = 59)
- 3-week (n = 50)
- 5-week (n = 12)

**Group**

- Severe disability
- No disability

**n = 121**

**r = 0.34, p < 0.001**
SAC and SOAC – After Group

Severe disability

No disability

Group:
- 2-week (n = 27)
- 3-week (n = 19)
- 5-week (n = 10)

n = 56
r = 0.60, p < 0.001
### SAC_SOAC: Comparison of 2-week and 3-week Outcomes

#### PHL

<table>
<thead>
<tr>
<th></th>
<th>2-week (n=27)</th>
<th>3-week (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### FCP

<table>
<thead>
<tr>
<th></th>
<th>2-week (n=27)</th>
<th>3-week (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Error bars = 1 SD
SAC_SOAC: Comparison 2-week and 3-week groups

No significant differences
\( \text{SAC}_\text{pre} - \text{SAC}_\text{post} \), Critical Difference score

Above line = reduced effects (Post<Pre); Below line (Post>Pre) = increased effects

2% >CDS (23%, paper & pencil)
SOAC\textsubscript{pre} – SOAC\textsubscript{post} Critical Difference score

Above line = reduced effects (Post<Pre); Below line (Post>Pre) = increased effects

22 % >CDS (16%)
The International Outcome Inventory – Alternative Interventions (IOI-AI)

The University of Arizona

1. Think about how much you used the Living with Hearing Loss (LWHL) strategies over the past 2 weeks. On an average day, how many hours did you use them? [USE]
   1) None
   2) Less than 1/day
   3) 1-4 hours/day
   4) 4-8 hours/day
   5) More than 8 hours/day

2. Think about the situation where you most wanted to hear better, before doing the class. Over the past two weeks, how much has the LWHL class helped in that situation? [BENEFIT]
   1) Helped not at all
   2) Helped slightly
   3) Helped moderately
   4) Helped quite a lot
   5) Helped very much

3. Think again about the situation where you most wanted to hear better. When you use the strategies talked about in the LWHL class, how much difficulty do you still have in that situation? [Residual Activity Limitation]
   1) Very much difficulty
   2) Quite a lot of difficulty
   3) Moderate difficulty
   4) Slight difficulty
   5) No difficulty

4. Considering everything, do you think doing the LWHL class was worth the trouble? [Satisfaction]
   1) Not at all worth it
   2) Slightly worth it
   3) Moderately worth it
   4) Quite a lot worth it
   5) Very much worth it

5. Over the past 2 weeks of using the LWHL strategies, how much have your hearing difficulties affected the things you can do? [Residual Participation Restrictions]
   1) Affected very much
   2) Affected quite a lot
   3) Affected moderately
   4) Affected slightly
   5) Affected not at all

6. Over the past 2 weeks of using the LWHL strategies, how much were other people bothered by your hearing difficulties? [Impact on Others]
   1) Bothered very much
   2) Bothered quite a lot
   3) Bothered moderately
   4) Bothered slightly
   5) Bothered not at all

7. Considering everything, how much has using the LWHL strategies changed your enjoyment of life? [Quality of Life]
   1) Worse
   2) No change
   3) Slightly better
   4) Quite a lot better
   5) Very much better

Q4, “Considering everything, do you believe that the LWHL class was worth the effort”

94%

No significant differences as a function of number of sessions or between PHL or FCP (Wilcoxon/Mann-Whitney U, Wilcoxon signed-rank test)
Three Things I Remember from Session I

- Walk before you talk: 52%
- Tell people you have hearing loss: 20%
- Anatomy/audiograms: 28%

Approx. 70% remembered a coping or communication strategy.
99% rated groups as Excellent or Good
The group setting was most valuable, especially sharing personal experiences about hearing loss. I would strongly recommend this course before investigating and/or purchasing a hearing aid.

- I am more willing to advocate for my needs. Also, for the first time I understand more about the hearing process and the anatomy of the ear. It was a very valuable course, for which I am very grateful.

- Very helpful in improving our interpersonal relationship.

- You have armed us well to better cope with this disability.
... Through the discussion sessions in the AR group, I learned about the communication difficulties and struggles hearing-impaired people and their family members face in their daily life in a more practical way. ... Many of the difficulties and frustrations they encounter could be eliminated or decreased after they apply the communication strategies we discussed...
Students’ Comments

...The energy was extremely positive and I feel like all the participants, including myself, learned a great deal from each session. I hope that when I am working in the field of audiology I am able to use the tools I learned from this class, and what I learned from all of the participants, to effectively start my own rehab programs in the future.
Implementing a LWHL approach is a shift in philosophy. The time invested results in meeting or exceeding the goals for Best Practice as an Audiologist.
Acknowledgments

- Our many participants
- Our **EXCELLENT** Doctor of Audiology students, especially, Mary Rose Durkin, Brittany Tennyson, Amy Marin, Lynn Iversen
- Dr. Nicole Marrone and Dr. Mark Borgstrom who assisted with data analysis
- Jim and Dyan Pignatelli for funding and ongoing support
References and Resources

Review articles/chapters


**Outcome Measures:**


**Materials Development (limited list):**


Ida Institute. [http://idainstitute.com](http://idainstitute.com)

