Hearing aids alone are not the only option: improving hearing-related knowledge

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ASHA, Los Angeles, 10.11.17
Delivery and retention of information

“You get a lot of information … by the time you get home, you’ve forgotten most of it.”
51% found difficulties using aid at first

(AoHL Hear Me Out, 2011)

Retention of information in first-time HA users after 6 weeks

Overall = 49.6%
Practical = 62.9%    Psychosocial = 34.3%

(El-Molla, Smith, Henshaw, Ferguson, BAA, 2012)
Re-usable learning objects (RLOs)
(or interactive video tutorials to you and me)

Commonly used in elearning environments

Interactive multimedia clips

- Participatory approach - high quality materials aligned to the user’s needs
- Improve motivation and compliance with health treatments
Select the statement: that is the correct action if you experience pain or discomfort from your earmould

a. Continue to wear the hearing aid despite the pain.

b. Contact Audiology - there may be a problem with the fitting of the earmould.

c. Give up wearing the hearing aid.
The correct answer is b

The earmould may feel strange to begin with, however there should be no pain or discomfort.

The audiologist may need to re-shape the earmould or re-instruct you.
Increasing hearing-related knowledge for first-time hearing aid users

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RLO access and compliance

All could access the RLOs – but some barriers
n=675 (49.5% fit criteria)
**No access to DVD, PC or internet = 32%
Poor understanding of English = 9%
Inability to use RLOs due to cognitive decline = 15%

These barriers have implications for implementation into clinical practice.

RLO uptake and compliance
Expressed interest in RLOs and participating in study = 78%
Compliance was high
• 94% watched all the RLOs at least once

There is high interest and compliance with the RLO concept.
RLO re-use suggests self-management

<table>
<thead>
<tr>
<th>RLO title</th>
<th>% watched 2+</th>
<th>Times watched (max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acclimatisation</td>
<td>56</td>
<td>5</td>
</tr>
<tr>
<td>Getting to know HA</td>
<td>56</td>
<td>5</td>
</tr>
<tr>
<td>Insertion of HA</td>
<td>53</td>
<td>7</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>52</td>
<td>5</td>
</tr>
<tr>
<td>Expectations</td>
<td>48</td>
<td>5</td>
</tr>
<tr>
<td>Phones and ALDs</td>
<td>45</td>
<td>4</td>
</tr>
<tr>
<td>Communication</td>
<td>39</td>
<td>5</td>
</tr>
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</table>

2+ times mean = 49.9% (39-56)
3+ times mean = 20.2% (19-38)
Highly significant effect of video group
- total (p<.001)
- practical (p<.001)
- psychosocial (p<.001)

Generally large effect sizes

V+ group: better knowledge of HAs and communication

20 item questionnaire; free recall 6 weeks post-fitting

Total n=167
V+ n=79 (47.3%)
V- n=88 (52.9%)

E.S. Cohen’s $d$
$\geq 0.8$ large
$\geq 0.5$ moderate
$\geq 0.2$ small

Error bars = mean +/- 95% CI
**V+ group:** better practical HA maintenance skills

Highly significant effect of video group overall (p<.001)
- but only for HA/EM clean and phone use (p<.001), with moderate effect sizes
- Super users?

**Practical Hearing Aid Skill Tasks (PHAST); 18 items**

- **d=.57**
- **d=.54**
- **d=.64**

![Bar chart showing PHAST scores with error bars.](image)
V+ group: improvements in use

Glasgow Hearing Aid Benefit Profile

Suboptimal users (use <70%)

No significant difference between V+ and V-

But: use is greater in challenging listening situations (p < .05)

E.S. Cohen’s $d$
- $\geq 0.8$ large
- $\geq 0.5$ moderate
- $\geq 0.2$ small

Error bars = mean +/- 95% CI

n=38
RLOs were rated as highly useful

- Quantitative and qualitative methods

<table>
<thead>
<tr>
<th>RLO title</th>
<th>Useful (1-10)</th>
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<tbody>
<tr>
<td>Troubleshooting</td>
<td>9.2</td>
</tr>
<tr>
<td>Acclimatisation</td>
<td>9.1</td>
</tr>
<tr>
<td>Insertion of HA</td>
<td>9.0</td>
</tr>
<tr>
<td>Expectations</td>
<td>9.0</td>
</tr>
<tr>
<td>Getting to know HA</td>
<td>8.9</td>
</tr>
<tr>
<td>Communication</td>
<td>8.8</td>
</tr>
<tr>
<td>Phones and ALDs</td>
<td>8.5</td>
</tr>
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Top 5 words to describe RLOs

- valuable
- stimulating
- useful
- fresh
- consistent
Positive feedback on RLOs

- 5 point scale (strongly agree to strongly disagree)
  - Enjoyed watching the RLOs 93% 3%
  - If I had a problem I would refer back to RLOs 88% 6%
  - Quiz was valuable to show me what I’d learned 88% 3%
  - Prefer RLOs to written information 82% 7%
  - Gave me confidence to use HAs and communicate 80% 3%

- 78% would recommend the RLOs to other people
### Evaluation: Clinically registered RCT (N=203)

<table>
<thead>
<tr>
<th>Take-up and adherence</th>
<th>Self-management</th>
<th>HA knowledge &amp; skills</th>
</tr>
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<tbody>
<tr>
<td>Take-up = 78%</td>
<td>2+ times = 49.9%</td>
<td>Better knowledge on HAs and communication &amp; HA handling skills</td>
</tr>
<tr>
<td>94.3% watched all RLOs</td>
<td>Re-use suggested self-management</td>
<td></td>
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<table>
<thead>
<tr>
<th>HA use</th>
<th>Valued by users</th>
<th>Health economics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater use (GHABP) suboptimal users</td>
<td>Rated RLOs as highly useful (9/10) Improved confidence Preferable to written info</td>
<td>RLOs were a very effective and cheap healthcare intervention</td>
</tr>
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(Ferguson et al, Am J Aud 2015; Ear Hear, 2016)
Current developments: individualisation

- Tailored
- Bite-sized
- Interactivity
- Self-evaluation


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Current developments: greatest impact for joint working

Think Aloud techniques
• CPs - would change their behaviour to help improve communication based on their learning from the mRLO.

“That’s what we shall look for [a quiet restaurant table]” (CP)

• mRLO prompted novel discussions about challenging communication situations

“We are both on the same wavelength, we can look for it now” (PHL)
Summary of ehealth developments

**Dissemination**

C2Hear Online
Lifetime views 74,358

- United Kingdom: 39%
- United States: 32%
- Canada: 6%
- India: 4%
- Australia: 3%

US version now developed

<table>
<thead>
<tr>
<th>Year</th>
<th>Content Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2015</td>
<td>Freely available online</td>
</tr>
<tr>
<td>2016/17</td>
<td>mRLOs for communication partners</td>
</tr>
<tr>
<td>2017/18</td>
<td>mRLOs tailored for hearing aid users</td>
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</tbody>
</table>

www.youtube.com/C2HearOnline
Vision for future: to develop a self-management system

- Knowledge
- Tailored
- Interactive
- Self-evaluation
- Peer support

Communication Partners

Patients

C2Hear Online

Public

Non-audiological HCP

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Welcome to m2Hear

Please select your hearing aid type

Open fit

Custom earmould
Initial options – based on patient journey

Welcome to m2Hear

Select the section that you would like to explore:

- Using your hearing aids
- Getting used to your hearing aids
- Looking after your hearing aids
- Communication with others
- Using phones and other devices
How do I know which hearing aid is for my left/right ear?

Try the activity?

How do I turn my hearing aids on and off?

How do I change programmes on my hearing aids?

Try the activity?

How do I change the volume on my hearing aids?

How do I keep my hearing aids safe?

How do I change my hearing aid battery?

When should I change my hearing aid battery?
Activity: labelling a hearing aid

Labelling activity
Drag the matching label into the box for each arrow?

Battery compartment and on/off switch
This is the battery compartment, which also acts as the on/off switch.
To switch on the hearing aid, close the battery drawer so it is firmly shut. The hearing aid will switch on within 15 seconds.
To switch off the hearing aid, open the battery compartment ajar to disconnect the battery. It is important you do this whenever you are not wearing your hearing aid, otherwise the battery will go flat very quickly.
Activity: focus on when it is important to hear well

What tips can help me improve taking part in conversations?

Conversation activity

Activity: List up to three types of conversation where it is important for you and other people to hear as well as possible.

1: Discussions with work colleagues
2: Pub on a Friday night with husband
3: [Blank]

Think of how you can communicate better in these conversations in future. Discuss with those who you communicate with to see how you can work together to improve conversation.

Click on the options below to see what other people have said:

- **Having everyday conversations:**
  - "I was having problems, not picking everything up and missing what others were telling me. I kept saying, 'Pardon? Could you tell me what that was again?'"

- **Having a conversation with my partner/spouse**

- **Having a group conversation**
Thanks to
Mild to moderate hearing loss team

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