Are good outcomes driven by good devices, good clinicians, or good clients?

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Effect of hearing loss on reported benefit

Current effect: $F(3, 281)=1.1951$, $p=.31194$

Vertical bars denote 0.95 confidence intervals

<table>
<thead>
<tr>
<th>4FA HL in better ear (dB HL)</th>
<th>None</th>
<th>Slight</th>
<th>Moderate</th>
<th>Quite a lot</th>
<th>Very much</th>
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Client indicators

- Gender
- Socioeconomic
- Age
- Hearing loss
- SNR loss
- Tinnitus
- Unaided difficulty and hearing needs
- Social activity level
- Motivation to get hearing aids
- Prior aid experiences
- Self efficacy
- Acquiring hearing aids
- Expectations
- Outcomes achieved
Overview

- 147 clinicians registered details
- 34 clinicians submitted assessments
- 256 Assessments
- 224 Fitted
- 62 Outcomes results
The clinicians
Clinician characteristics:

1. The audiologist is the one who should decide what gets talked about during an appointment.

3. The most important part of the standard audiological appointment is the hearing test.

5. Clients should rely on their audiologists’ knowledge and not try to find out about their conditions on their own.

15. The client must always be aware that the audiologist is in charge.
Clinician characteristics:
Higher level technology
The clients
Cognition and dexterity

Chart showing the relationship between cognition and dexterity, with a 43% overlap indicated.
The hearing aids
Features

Volume control
Automatic volume control
Remote Control
Auto acclimatization
Training/learning

Adaptive noise reduction
Transient noise reduction
Wind Block
Echo Block

Wireless connectivity
Bilateral Synchronisation

Directional microphone
Adaptive directional microphone
Binaural beamforming

Feedback Cancellation

Manual multi-memory/manual multi-program
Automatic environmental adaptation/Automatic multi-memory

Telecoil (T-Switch)
Autophone telecoil
Duophone

Multichannel compression
Expansion
Frequency transposition/compression

Data logging

Real ear sound
Sound Brilliance

Water resistant/Nano coating

Adaptive tone indicator
Speech message generator
Who acquired hearing aids?
People acquiring hearing aids were significantly more likely to:

- Express more interest in acquiring hearing aids ($r=0.51$)
- Report more difficulty in hearing overall ($r=0.31$)
- Have higher expectations of hearing aids ($r=0.31$)
- Have more hearing loss in their better ear ($r=0.23$)
- Report more difficulty hearing in quiet ($r=0.22$)
- Believe they could manage hearing aids ($r=0.13$)
The outcomes
IOI-HA benefit

Number of clients vs. Benefit from hearing aids:
- Not at all
- Slightly
- Moderately
- Quite a lot
- Very much

Number of clients vs. Residual problems with hearing aids:
- Very much
- Quite a lot
- Moderate
- Slight
- None
Additional outcomes questions

• One versus two aids worn,
• Perceived attitude of clinician
  • *Interest in individual problems*
  • *Decision maker at assessment*
  • *Desired decision maker at assessment*
• Ease of use of controls
• Whistling
• Physical comfort
• Loudness comfort
• Sound quality
• Own voice
• Rating of listening difficulty by significant other
Benefit versus loss

Benefit = 2.869 + 0.017*4FAHL (p = 0.08)
Were bilateral hearing aids worn bilaterally?

80% of bilateral fittings
Predicting benefit

Benefit is not related to:
• Whistling (feedback oscillation) \( (p=0.89) \)

Benefit is related to:
• Uncomfortable loudness \( (p=0.03) \)
• Own voice quality \( (p=0.02) \)
• Physical comfort \( (p=0.01) \)
• Sound quality \( (p=0.002) \)
• Clinician interest \( (p<0.001) \)
Benefit versus perceived clinician interest

![Graph showing the relationship between perceived interest of clinicians and benefit from hearing aids. The x-axis represents the perceived interest of clinicians, ranging from not at all interested to very interested. The y-axis represents the benefit from hearing aids, ranging from not at all to very much. The graph includes a p-value of less than 0.001.]
Problems

Comfort

Sound quality

Loudness

Own voice

Whistling
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**Individual low-benefit clients**

![Bar chart showing benefit from hearing aids]
Something identifiably wrong or difficult with every one of the poorest seven outcomes!
So, are good outcomes driven by:

- good devices,
- good clinicians,
- good clients?

N = 62!
What you get

- Continuing education points from Aud Aust and ACAud
- Updates from me on interesting findings as they accumulate
- Extra time to get started
- Nice feeling from helping create much-needed evidence

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Any questions?

The support of the Hearing Industry Research Consortium and the Australian Department of Health is greatly appreciated.

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