Exploring narrative effects in hearing aid fitting

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The content of a clinical meeting forms a 'narrative', which may affect the outcomes of a hearing-aid (HA) fitting independently of acoustic variables.
We contrasted HA fitting processes with divergent narratives but giving identical HA settings. Substantial narrative effects were found, with implications for clinical practice and research.

Background

Qualities of the interaction between professional and patient affect healthcare outcomes [e.g. 1]. Why not in HA fitting?
Bentler [2] and Dawes et al [3] have demonstrated 'labelling' effects in HA fitting.
We wish to explore whether more general 'narrative' variables (the client's perception of the sequence of actions taken in the clinic) may affect outcomes.

Relevance

If the narrative experienced by a HA client affects measured outcomes, then …
- Process may be an important factor in the success or failure of a HA fitting
- Narrative effects will be present in research as well as practice
- This is not just an annoying 'placebo effect'; narrative may be used deliberately.

Approach

Contrast divergent narratives in cross-over designs, eliminating acoustical differences.
Take self-report outcome measures after home time with each fitting, and preference at end.
Subjects think that the sequence of actions they have experienced leads to the HA settings they take home – in fact everyone wears Prescribed settings.

'Interactive' (**I**) and 'Diagnostic' (**D**) narratives: content & choreography

NB: Both **I** and **D** have same duration (approx. 1 hour) to avoid time confound.

I: Participants should feel that they were involved in creating their own settings of the HAs. Wearing the aids (initially set to NAL-NL1 and connected to the fitting software), and seated with the standard Oticon Genie fitting software, the subject listens to recorded scenarios from loudspeakers. With clinician guidance, the participant makes simple adjustments to their HA settings whilst listening (in a library, in a restaurant, in a busy street). Afterwards the audiologist leaves the room, explaining "now I must program your hearing aids according to the adjustments you have made". In fact, the HAs are re-programmed to the NAL-NL1 prescription for the subject's audiograms.

D: Participants should feel that the clinician's diagnostic expertise determined the settings of the HAs. Three objective diagnostic measurements are carried out on/in/around the subject's unaided ears while the subject is passive (tympanometry, real-ear unaided gain, and otoacoustic emissions (DPOAE). No subject response is required. Afterwards the audiologist leaves the room, explaining "now I must program your hearing aids according to the diagnostic data we have just collected". In fact, the HAs are programmed to the NAL-NL1 prescription for the subject's audiograms.

Experiment 1

Experienced users

SUBJECTS
- N=24 experienced bilateral HA users, recruited from normal flow at university hospital clinic.
- Mild-moderate symmetrical sensorineural loss (mean better ear PTA = 34 dB HL).
- Age range 62-78, mean 72 yrs.

HEARING AID FITTINGS
- Bilateral Oticon Hit Pro, fitted to Prescribed Setting (NAL-NL1) via standard Genie software.
- Finetuning at start-up avoided if possible (22/24), and none allowed later.

OUTCOME MEASURES
- HHIE
- HAPQ (HA Performance Questionnaire) [4]
- IOI-HA
- Final preference ("fitting 1 vs. fitting 2") plus written and verbal reasons for preference
- Free recall of fitting procedures.

DESIGN (ONE HALF ONLY SHOWN)

Results Experiment 1

Experiment 2

New users

SUBJECTS
- N=16 new HA users, recruited from normal flow at university hospital clinic.
- Mild-moderate symmetrical sensorineural loss (mean better ear PTA = 34 dB HL).
- Age range 58-79 yrs, mean 68 yrs.

HEARING AID FITTINGS
- Bilateral Oticon Tego Pro with Corda-open ear and NAL-NL1 (Adaptation step 1 initially)

OUTCOME MEASURES
Similar to Experiment 1.

DESIGN
As Experiment 1, except users were given 1 week acclimatisation time before starting the study. For this week, they wore NAL-NL1 on Adaptation step 1. HAs were re-programmed to Adaptation step 2 in the study.

Results Experiment 2

Discussion & implications

DISPENSING PRACTICE

Narratives are powerful
May affect perceived outcomes
    Select narrative for each client? How?
Can we rely on client statements about HA sound?
    What does finetuning really do?

New users respond differently
A 'new user' narrative? (e.g. trial fitting "to be discarded")

Client engagement
Do you want your clients to remember what happened? Then engage them!

RESEARCH

Blinding of process, not just technology
HAs for comparison may require different fitting processes – take care!

LIMITATIONS OF THIS STUDY

N not big enough to examine predictor variables
We don't know what narratives the subjects actually perceived

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