A first attempt at a comprehensive Own Voice Qualities (OVQ) questionnaire

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Introduction
It seems to be a common conception that open fittings will remove occlusion and thereby eliminate all the hearing-aid (HA) users’ problems related to own voice. We think this is a misconception!

We are convinced that there are other issues to own voice besides occlusion. We mainly have our evidence from previous studies at Eriksholm where HA users have participated in detailed interviews concerning own-voice issues.

In order to be able to convince others, the OVQ questionnaire was developed to probe into the various own-voice issues that we have identified, including but not restricted to occlusion.

The OVQ is supposed to be able to demonstrate both the significant of occlusion, and that some HA users have own-voice issues – even when their occlusion problems have been essentially solved.

OVQ contents
All questions in the OVQ are formulated as statements to which the respondent has to state his or her level of agreement (on a scale from 0 to 12). The questions are grouped in sections (A – N), addressing different overall own-voice topics:

- General own-voice questions
- Sound quality (descriptive language)
- Sound quality (single words)
- Speak and hear
- Level control
- Strategies used for level control
- Whispering
- Localization of own voice
- General own-voice questions
- Own voice when having a cold
- Sound quality (when having a cold)
- Own voice in the period just after receiving hearing aids
- Supplementary questions about hearing aids
- Own voice without use of hearing aids

The OVQ package
The OVQ package consists of three different versions of the questionnaire, appropriate for three different groups of respondents:

- Unilateral hearing-aid users
- Bilateral hearing-aid users
- Non-users of hearing aids

Furthermore, the package includes written instructions to the interviewer and a suggestion of an introductory letter to the respondent.

The OVQ is at the present time available in Danish (original), English and German.

How to get it?
You can get access to the entire OVQ package from Eriksholm.

Future
The current version of the OVQ is a first attempt. When more experience is gathered, it may be required to:

- Reformulate questions
- Skip individual questions or entire sections
- Include new questions or sections
- Modify the response scale
- Make an abbreviated version intended for clinical use
- Translate to other languages

A large-scale (N = 200) OVQ study is scheduled to take place this autumn in Oldenburg, Germany.

Conclusion
In our opinion, the own-voice part of hearing-aid users’ communication is neglected.

We suggest the OVQ questionnaire as a tool to demonstrate possible own-voice issues of HA users – including but not restricted to occlusion problems.

Preliminary data show that even though a lot of HA users do not report about own-voice problems, some HA users have a very distinct experience of one or more of the own-voice issues covered by the OVQ.

More data are needed to further improve our understanding of how HA users perceive their own voice – and to further improve the OVQ.

We offer the OVQ package to everyone interested.
Introduction
It seems to be a common conception that open fittings will remove occlusion and thereby eliminate all the problems that unilateral hearing-aid (HA) users related to own voice. We think this is a misconception!

We are convinced that there are other issues to own voice besides occlusion. We mainly have our evidence from previous studies at Erkholm where HA users have participated in detailed interviews concerning own-voice issues. In order to be able to convince others, the OVQ questionnaire was developed to probe into the various own-voice issues that we have identified, but not restricted to occlusion. The OVQ is supposed to be able to demonstrate both the significance of occlusion, and that some HA users have own-voice issues – even when their occlusion problems have been essentially solved.

Instead of developing the OVQ based on our own prioritized ideas about own voice, the concept has been based on actual statements made by HA users – using the exact same words and formulations as far as possible.

The user statements have been collected during:
• A focus-group interview on own voice
• A number of individual interviews on own voice

The interview has been a tool technical language and make the contents both easy understood and relevant to the respondents.

What do YOU say?

Using hearing-aid users' own statements

OVQ contents
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A: General own-voice questions
B: Sound quality (descriptive language)
C: Sound quality (single words)
D: Level control
E: Location of own voice
F: Supplementary questions about hearing aids
G: Other vocal levels
H: General own-voice questions
I: Own voice when having a cold
J: Own voice when having a hollow
K: Own voice when having a metallic
L: Own voice in the period before and after the hearing aids
M: Supplementary questions about hearing aids
N: Own voice without use of hearing aids

Example from pilot study: D5: “I can easily hear what people are saying to me if they interrupt me before I am finished speaking.”

Pilot study
All data are taken from an OVQ pilot study, which has been carried out at Hørzentrum Oldenburg. 30 experienced HA users and 10 normal-hearing (NH) people were divided into four groups of 10 test subjects – according to their low-frequency (LF) hearing loss and HA type. The HA users had a variety of HA models. All groups were matched for age.

Some HA users have reported that their own voice has a detrimental effect on their ability to hear others – particularly in playing hide and seek.

Section D includes a number of statements about situations when the respondent speaks while being in a group of people who also speak. The other people in the group are supposed to be well known to the respondent as interrupting each other should be as a problem in terms of occlusion.

The interview is in section A partly deal with the level of own voice in comparison with the voices of others and justify the ability to follow a conversation while speaking. As a special condition, the ability to listen while eating is also included.

Some preliminary observations from the study
• In general, the OVQ makes people talk – about their own voice!
• Median scores indicate no or minor problems on many scales – but individual scores indicating major problems are also present.
• Some individual scales show interesting results.
• We did not always observe the predicted differences between HA user groups – and between HA users and NH people.

The first section (A) of the OVQ includes three rather general questions about own voice. Whether own voice sounds good, whether own voice sounds satisfactory, and whether the respondent feels confused or contaminated when speaking.

In section B we ask several questions about the level of the respective sound quality. In the expected difference between the groups. We did not always observe the predicted differences between the groups.

The statements in the section partly deal with (the level of) own voice in comparison with the voices of others and partly the ability to follow a conversation while speaking. As a special condition, the ability to listen while eating is also included.

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• We did not always observe the predicted differences between HA user groups – and between HA users and NH people.

Potential explanations for unexpected observations
Self-selection between groups 1 and 2. People accepting small vents may be less prone to occlusion problems, and that will reduce the expected difference between the groups.

Future
The current version of the OVQ is a first attempt. When more experience is gathered, it may be required to:
• Refine questions
• Skip individual questions or entire sections
• Include new questions or sections
• Modify the response scale
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