RELATIONSHIPS BETWEEN SELECTED PERSONALITY VARIABLES AND SELF-ASSESSED HEARING AID BENEFIT

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Presented at the American Academy of Audiology National Convention, Salt Lake City, UT, April 1996

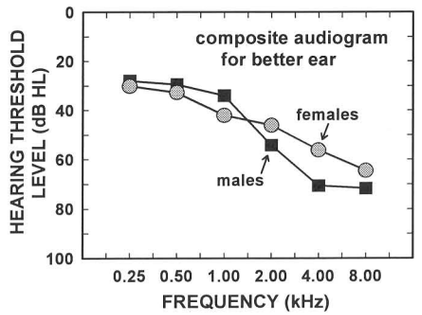
Introduction:

There is large between-subject variability in self-assessed hearing aid benefit, even among persons who seem superficially similar. Aspects of individual personality might contribute to this variability. If so, it might be possible to use personality variables to help predict the success of amplification, even before a hearing aid is fitted. This research assessed the extent to which four personality variables contributed to the prediction of unaided and aided disability measured by the Abbreviated Profile of Hearing Aid Benefit (APHAB).

Who Were the Subjects?

Subjects were elderly, mostly retired, and in good health. The typical subject used 2-3 prescription medicines per day, lived with one other person, talked to 3-4 other people each day, went out 4 or more times per week, and had some college education.

	Mean	Range.
Male age (N=60)	74	63-89
Female age (N=23)	76	68-88
H. Aid experience	1-10yr	0.1 to 10+yr
H. Aid use per day	4-8hr	<1 to 16hr



Personality Variables

EIP: Extraversion-Introversion Preference
Preference for orientation outward to people and things or inward to concepts and ideas.

Anx: Trait Anxiety
General or habitual anxiety level.

IS: Internal Scale
Belief that one controls one's own life.

PO: Powerful Others Scale
Belief that others have control over one's life.

APHAB Subscales

EC: Ease of Communication
Effort to communicate in relatively easy situations.

RV: Reverberation
Problems communicating in reverberant rooms.

BN: Background Noise
Problems communicating in noisy situations.

AV: Aversiveness
Negative reactions to environmental sounds.

Simple Relationships

- Hearing aid use (hours/day) was related only to unaided speech communication problems (EC, RV, and BN). **More unaided problems = more use of hearing aid.**
- Unaided EC and unaided RV were related only to extent of hearing loss (SRT). **Persons with more hearing loss reported more problems.**
- Unaided BN was related to extent of hearing loss (SRT) and to gender. **Males reported more problems than females.**
- Unaided AV and aided AV were related to PO. **People who believe that others have more power over them reported more negative reactions to environmental sounds, both with and without amplification.**
- Aided AV was also related to gender and to age. **Males and younger listeners reported more aversiveness for amplified environmental sounds.**
- Aided EC was related to anxiety (Anx). **More anxious people reported more aided communication problems in favorable situations.**
- Aided RV and aided BN were both related to extent of hearing loss (SRT) and to inward/outward orientation (EIP). **People with more hearing loss reported more aided communication problems in noisy and reverberant situations. People who prefer an outward orientation reported fewer aided problems in difficult situations.**
- Aided BN was also related to PO. **People who believe that others have more power over them reported more communication problems in noise.**

Combining Predictor Variables

Some of the variables identified as related to APHAB scores are also related to each other. Simple correlations cannot tell us which variables make independent contributions to subscale scores.

Multiple regression techniques were used to determine whether hearing loss variables and personality variables can be combined to provide a more accurate prediction of self-assessed disabillity and benefit than either type of variable used alone.

The Table below shows which variables were independently associated with APHAB scores and how much of the variance in APHAB scores could be explained by hearing loss, gender, age, and personality attributes.

Subscale	Variable	% of Variance
unaided EC	SRT	10
unaided RV	SRT	17
	EIP	4.5
unaided BN	SRT	8.6
	Gender	8.4
unaided AV	PO	10
aided EC	Anx	5
aided RV	SRT	5
	EIP	19
aided BN	SRT	10
	slope	8
	EIP	4
aided AV	PO	13
	age	6
benefit EC	EIP	9.5
	SRT	8.5
benefit RV	EIP	20
	SRT	5
benefit BN	EIP	10
benefit AV	Gender	9

Conclusions: Personality attributes are related to subjective assessment of hearing disability

◆ **Speech Communication**

Unaided..... 1) The consistent predictor of disabiity was *extent of hearing loss* (not surprising)!
2) Persons with an *outward orientation* to the world reported more problems communicating in reverberation.
3) Males reported more problems in background noise but this could be related to the male/female audiogram differences.

Aided..... 1) In favorable situations, *anxiety level* was related to the disability score - perhaps because more anxious individuals choose a lower gain setting and, therefore, have more problems.
2) In unfavorable situations, (reverberation and background noise) disability was related to *extent of hearing loss* and, in background noise, to *slope of the audiogram.*
3) In unfavorable situations, an *outward orientation* to the world was associated with fewer reported aided problems.

Benefit..... 1) The strongest predictor for every situation was an *outward orientation* to the world. Outward-oriented people reported more benefit from their hearing aids than inward-oriented people.
2) Persons with more hearing loss also reported more benefit.

◆ **Aversiveness**

Unaided..... 1) *Belief that other people have control* over one's life was associated with greater negative reactions to environmental sounds, regardless of hearing loss.

Aided..... 1) *Belief in control by other people* was also associated with negative reactions to amplified environmental sounds.
2) As age increased negative reactions to amplified sounds decreased.

"Benefit"..... 1) Increase in aversiveness as a result of amplification was greater for males than females (possibly related to hearing aids fitted for different audiograms).

◆ Although these relationships provide helpful insights into the bases for self-assessed disability, they were not strong enough to allow confident predictions for any individual patient.

HARL
Hearing Aid Research Lab.

Acknowledgement: Supported by funding from the Department of Veterans Affairs, RR&D Service. Stephanie Beard, Kristy Culler, and Camilla Nabholz helped collect data.