

EVALUATION OF THE VALIDITY OF THE ALSA QUESTIONNAIRE

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INTRODUCTION

Audiologists often encounter clients with mild to moderate hearing loss who seem to be candidates for amplification but who ultimately reject hearing aid use. Although clinicians may feel that they are able to predict who will benefit from amplification on the basis of extra-audiological variables, the success of their predictions has received little systematic investigation. In professional practice, it is desirable to minimize the number of unsuccessful hearing aid fittings and to improve the accuracy of counselling about the potential for hearing aid success. To this end, we have attempted to develop a standardized approach to the prediction of probable success in hearing aid use.

The Assessment of the Likelihood of Success with Amplification (ALSA) is a 12-item questionnaire designed to be completed by the audiologist to predict success with amplification before the hearing aid is fitted. An earlier attempt to develop this kind of scale was the Feasibility Scale for Predicting Hearing Aid Use (FSPHAU) reported by Rupp et al. (1977). Some items from the FSPHAU were adapted for use in the ALSA. Several new items were also generated. A team of 6 clinicians used the scale professionally and co-operated in revising the items over a period of several months.

The ALSA differs from the FSPHAU in the following ways:

- * It is designed to be completed BEFORE a hearing aid fitting is undertaken.
- * It does not include audiological information.
- * It does not address financial issues.

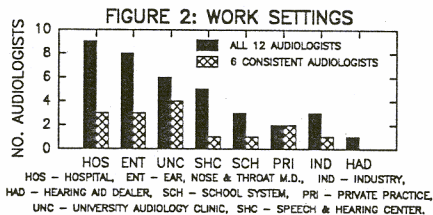
The ALSA is completed by the audiologist after:

- * Basic audiological evaluation.
- * Client counselling describing the hearing loss and reviewing hearing aids and their use.
- * Observing the client's manual dexterity.

The responses to ALSA items are scored to achieve an overall composite score of 0-100, where a higher score predicts a higher probability of success with amplification.

The goals of this study to evaluate the ALSA were:

1. To determine the consistency with which different audiologists completed the scale.
2. To evaluate the validity of the ALSA as a predictor of potential amplification success.



METHOD

The ALSA was used to predict the likelihood of success with amplification for 10 potential hearing aid wearers. Each hearing-impaired subject was evaluated by 12 audiologists working independently.

Hearing-Impaired Subjects

Each of the 10 hearing-impaired subjects presented at a speech & hearing clinic complaining of decreased hearing ability in various listening situations in their daily lives. They were judged by the audiologist to be potential hearing aid wearers.

- * Their mean age was 71 years (range: 45-81).
- * There were 6 men and 4 women.
- * Hearing losses were essentially sensorineural.
- * Audiograms are shown in Figure 1.

Audiologists

Twelve audiologists participated.

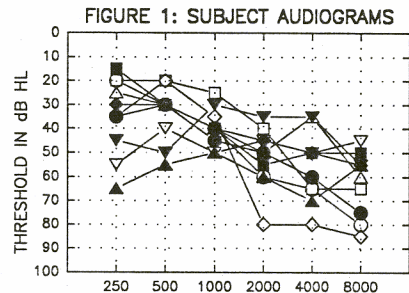
- * Their mean age was 33 years (range: 29-41).
- * There were 9 women and 3 men.
- * They came from various work settings (see Figure 2).
- * Mean clinical experience was 8 years (range: 4-10+).
- * Mean hearing aid fitting experience was 5 years (range: 1-10+).

Procedure

The hearing-impaired subjects were:

1. Videotaped during a 10-minute counselling session in which topics pertinent to the ALSA scale were explored (motivation, self-assessment, TV, recreation, etc).
2. Given an audiological evaluation (AC/BC thresholds, impedance battery, speech audiometry).
3. Videotaped during a second 10-minute counselling session during which test results were explained, hearing aid use was explored, and manual dexterity was evaluated.

Each audiologist reviewed the videotapes and audiometric data for each subject. The ALSA was completed immediately after each subject's materials had been considered. Audiologists worked independently of each other.



RESULTS: AUDIOLOGIST CONSISTENCY

The ALSA responses were tallied to produce an overall score for each hearing-impaired subject from each audiologist. Thus, each audiologist provided 10 ALSA scores. A correlation matrix was generated showing the relationship between each pair of audiologists. Each correlation coefficient was a measure of the extent to which the pair of audiologists gave similar scores to each of the 10 hearing-impaired subjects. A correlation of more than .72 indicated that the two audiologists tended to give similar responses on the ALSA items.

The results indicated that 6 of the audiologists produced ALSA scores that were significantly inter-correlated. That is, 6 audiologists agreed with one another regarding which clients were more likely to be successful with amplification. However, the other 6 audiologists produced ALSA scores that were not significantly correlated: these 6 did not agree with one another regarding which clients were more likely to profit from a hearing aid.

Mean correlation coefficients:

6 consistent audiologists = .86
 6 variable audiologists = .34

An effort was made (see Table below) to determine what the 6 consistent audiologists had in common:

	consistent auds.	variable auds.
Mean age	35	31
Gender	1m,5f	2m,4f
Mean total experience	8 yrs	5 yrs
Mean h'aid experience	8 yrs	5 yrs

There were no outstanding differences between the two groups of audiologists but the consistent group were somewhat older and had somewhat more professional and hearing aid fitting experience, on average, than did the variable group.

Work settings were also scrutinized to determine whether the 6 consistent audiologists had a common experiential background. Figure 2 illustrates the previous work settings of all 12 audiologists compared with those of the 6 consistent audiologists. There is no evidence in Figure 2 that the 6 consistent audiologists had different or more homogenous experiences than the other 6 audiologists.

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RESULTS: VALIDITY OF THE ALSA SCALE

Despite their initial interest in amplification, 3 hearing-impaired subjects elected not to obtain hearing aids. Monaural ITE hearing aids were fitted for each of the remaining 7 subjects. One subject died prior to completing the study.

Five or more months after the fittings, data were solicited on hearing aid use, satisfaction, and benefit from each of the 6 hearing aid wearers.

Half of the 6 hearing aid wearers reported using their aid less than 4 hours/day. The others reported use of more than 8 hours/day. Two subjects were completely satisfied with their aids, 2 were mostly satisfied, and 2 were "half-and-half".

Benefit was measured using the Profile of Hearing Aid Benefit (PHAB), a self-administered inventory that provides a profile of 4 benefit scores. Although all 6 hearing aid wearers completed the PHAB, only 4 of the responses were judged to be valid. Self-assessed overall benefit ranged from 21% to 41%.

To evaluate the validity of the ALSA as a predictor of success with amplification, correlations were computed between each subject's mean ALSA score across the 6 consistent audiologists and the subject's use, satisfaction and benefit data. The correlations were:

ALSA and hearing aid use = .2
 ALSA and hearing aid satisfaction = .2
 ALSA and hearing aid benefit = .1

It is important to recognize that these correlations were computed on such small data sets that no firm conclusions can be drawn. Nevertheless, these results do not provide any grounds for confidence that audiologists are able to accurately estimate the potential for success with amplification of an individual with mild to moderate hearing loss when success is measured using a self-report approach. Even when audiologists agreed with each other regarding a client's potential for profit from a hearing aid, these predictions were not fulfilled by the hearing-impaired subjects in this study.

CONCLUSIONS

1. When the ALSA was used to quantify potential for success with amplification, only half of the audiologists participating in the study were in agreement regarding which of the hearing-impaired clients were more likely to be successful in hearing aid use.
2. The consistent audiologists did not seem to have any particular features in common.
3. Even when audiologists agreed with each other about which clients were more likely to be successful with amplification, their predictions were not fulfilled. Hearing aid use, benefit, and satisfaction data obtained 5 months post-fitting were not related to ALSA scores.
4. The results of this study were not encouraging regarding the usefulness of the ALSA questionnaire.

ASSESSMENT OF THE LIKELIHOOD OF SUCCESS WITH AMPLIFICATION

1. Who motivated the client to come to the clinic?

1. totally at urging of others
2. little self; mostly others
3. half self; half others
4. generally on own behalf
5. completely on own behalf

2. On comparing audiological evaluations with the client's self-assessment of hearing ability, there was:

1. no agreement
2. a little agreement
3. some agreement
4. considerable agreement
5. strong agreement

3. What were the verbalizations on the part of the client as to "fault" for communication difficulties?

1. environments/others totally at fault
2. minimally due to hearing loss
3. somewhat due to hearing loss
4. considerably due to hearing loss
5. greatly due to hearing loss

4. What was the client's attitude towards obtaining amplification after counselling about hearing test results and benefits/problems of hearing aids?

1. very negative
2. moderately negative
3. neutral
4. moderately positive
5. very positive

5. How often is the client involved in social/recreational/professional interpersonal interactions (at home or away from home)?

1. never
2. less than once a week
3. 1-3 days a week
4. 4-6 days a week
5. every day

6. Would the social/recreational/professional activities or success of the client be increased if he/she could hear better?

1. no
2. unlikely
3. maybe
4. probably
5. definitely

7. When at home, how well is the client able to understand speech via tv or radio without a hearing aid?

1. excellent understanding
2. not at all
3. considerably
4. moderately
5. a little

8. How often is there a significant other person who would assist the client in a rehabilitation program?

1. never
2. less than once a week
3. 1-3 days a week
4. 4-6 days a week
5. every day

9. Based on your observations of the client's manual dexterity, how many of these four items do you think (s)he would be able to do: clean aid, place in ear, change battery, adjust volume control.

1. none
2. one
3. two
4. three
5. four

10. Select the correct age from the following list of categories:

1. 90+
2. 80-89
3. 70-79
4. 60-69
5. 0-59

11. Rate the client's overall attitude as it seemed during your interactions with him/her.

1. very negative
2. moderately negative
3. neutral
4. moderately positive
5. very positive

12. Rate the client's general responsiveness during your interactions (was he/she "in touch" with, and interested in, what was going on).

1. not responsive
2. barely responsive
3. somewhat responsive
4. quite responsive
5. extremely responsive