

# Development of an Instrument to Evaluate Audiologic Counseling Skills

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## Abstract

This study describes the development of an instrument designed to evaluate audiologic counseling skills. In simulated counseling sessions, a trained actor portrayed a parent, and ten graduate audiology students role-played counseling sessions as audiologists informing the “parent” that her infant has a hearing loss. The ten sessions were videotaped, and three raters viewed the taped sessions while evaluating counseling skills with a new evaluation tool, the Audiologic Counseling Evaluation (ACE). The ACE was found to have excellent internal reliability ( $\alpha = .91$ ) and moderate-to-good inter-rater reliability. Raters’ subjective evaluations of the tool were generally positive, and students’ evaluations of the simulated counseling experience were overwhelmingly so. This instrument can be used by audiology faculty and clinical instructors to help students improve their counseling skills before interacting with parents. It can also be used in clinical settings for professional development by way of self- and peer-evaluation.

**Key Words:** counseling, student evaluation, standardized patient, “breaking news”

**Abbreviations:** ACE = Audiologic Counseling Evaluation; BAS = Breaking bad news Assessment Scale; ICC = Intraclass Correlation Coefficient

## Sumario

Este estudio describe el desarrollo de un instrumento designado para la evaluación las destrezas en la consejería audiológica. En sesiones simuladas de consejería, un actor entrenado actuó como un progenitor, y 10 estudiantes graduados de audiolología actuaron en dichas sesiones como audiólogos que informaban al “padre” que su niño tenía una pérdida auditiva. Las 10 sesiones fueron filmadas en video, y tres observadores calificaron las sesiones grabadas en tanto que evaluaban las destrezas de consejería con una nueva herramienta de evaluación, la Evaluación de Consejería Audiológica (ACE). Se encontró que la ACE tenía una excelente confiabilidad interna ( $\alpha = .91$ ) y una confiabilidad moderada a buena entre los evaluadores. Las evaluaciones subjetivas de la herramienta por parte de los jueces fueron positivas, y también las evaluaciones de los estudiantes simulando la experiencia de consejería. Este instrumento puede ser utilizado por profesores de audiolología y por instructores clínicos para ayudar a los estudiantes a mejorar sus destrezas de consejería antes de interactuar con los padres. Puede utilizarse en situaciones clínicas para desarrollo profesional por medio de auto-evaluaciones y evaluaciones entre estudiantes.

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**Palabras Clave:** consejería, evaluación estudiantil, paciente estandarizado, "noticias de última hora"

**Abreviaturas:** ACE = Evaluación de Consejería Audiológica; BAS = Escala de evaluación de malas noticias de última hora; ICC = Coeficiente de Correlación Intra-clase.

Audiology training programs have long been criticized for not providing adequate training in the psycho-emotional aspects of hearing loss and for not preparing the student as a nonprofessional counselor in these areas (Culpepper et al, 1994; Crandell, 1997). It is likely that inadequate training in audiologic counseling has contributed to patient dissatisfaction and non-adherence to treatment recommendations (Martin et al, 1989; Glass and Elliot, 1992; Mast et al, 2005). In the last five years, however, the expansion of training programs from a master's to a doctorate level degree has given many programs an opportunity to add coursework in counseling to their curriculum. A recent report indicates that most audiology doctorate (AuD) programs now require a course in counseling, or have incorporated counseling into at least one existing course (English and Weist, 2005).

Although textbooks are available to teach these courses, no tools currently exist to measure audiology students' counseling skills, although students have indicated a need for feedback and evaluation (English and Zoladkiewicz, 2005). In medical school training, however, several assessments have been developed, often with the use of *simulated patients*. Simulated or standardized patients are typically used to evaluate medical students' communication and listening skills (Barrows, 1985; Donnelly et al, 2000; Davidson et al, 2001; Mavis et al, 2002; Rosenbaum et al, 2004). In these evaluations, medical students conduct a consultation with an actor trained to represent typical patient concerns and behaviors, and also trained to step out of that role at the end of the experience to provide feedback to the medical student. The interaction is typically videotaped, and then the tapes are viewed/evaluated by instructors (and by the students themselves) using an assessment tool to rate skills and provide feedback.

Miller et al (1999) designed such an assessment with the specific goal of evaluating how one "breaks the news" to patients about breast cancer diagnoses. This assessment, called the "Breaking bad news Assessment Schedule" (BAS), was designed for three purposes: (1) to assess the clinician's overall counseling competence; (2) to identify areas where counseling skills may need more development; and (3) to evaluate the effectiveness of counseling training. Their study indicated that this instrument had high internal consistency and good inter-rater reliability.

One of the strengths of this assessment is its modeling of "patient-centered communication," found by Mast and colleagues (2005) to be most appropriate when attempting to convey difficult information and hope simultaneously. Patient-centered communication is characterized by "dosing" (giving information in small amounts) and by encouraging patients to talk about their feelings and concerns. In other words, providing both information and emotional support according to the patient's needs. When physicians use patient-centered communication skills, their patients report a higher degree of partnership-orientation and suffer less from depression and anxiety. The BAS is also consistent with recommendations for effective patient communication when the topic is difficult or upsetting (i.e., "breaking bad news") (Buckman, 1992; Fallowfield, 1993; English et al, 2004).

This study describes how the BAS was adapted to evaluate audiology students' counseling skills in one of audiology's greatest counseling challenges: informing parents that their baby has a hearing loss. The adapted instrument, called the "Audiologic Counseling Evaluation" (ACE) (Appendix A), underwent a preliminary content validity process. Five nationally recognized practitioners in pediatric audiology (see acknowledgements) reviewed the assess-

ment, and all *agreed* or *strongly agreed* with the following statements:

- This instrument accurately depicts the process or stages one should consider when needing to “break bad news” to parents.
- This instrument accurately describes behaviors that audiologists could exhibit to support parents during this type of consultation.
- This instrument gives appropriate suggestions for counseling and communication behaviors in addition to those demonstrated on the videotape.
- The “Sample Concern List” at the end of the assessment (found in Appendix B) accurately reflects concerns likely to be expressed by parents during this type of consultation.

Most of the experts’ suggestions were incorporated into the assessment. The subsequent version of the instrument was then evaluated to determine its internal consistency and inter-rater reliability.

## METHODS

### Participants

This project required the participation of one actress, ten graduate students, and three audiologists who used the assessment tool to evaluate the students’ counseling skills.

A female professional actor was hired to represent the parent of an infant with a diagnosed hearing loss. The actress had more than five years experience working as a simulated patient for a medical school and was completing a master’s degree in speech-language pathology. She received a one hour briefing about the project, the instrument being tested, and the concerns audiologists have about breaking the news to parents of hearing loss in infants. She was directed to integrate the “Sample Concerns List” found in Appendix B into her performance to standardize the simulation with each student.

Ten audiology graduate students were recruited to role play professional audiologists and conduct a “breaking the news” consultation with the simulated parent. All students were female, ages 23 to 49 (mean age 25.7 years). Eight students were completing their first year in an audiology doc-

toral program. One student was completing her second year, and one student was in the middle of her fourth year externship. Only the fourth-year student had completed a course in audiologic counseling.

Three raters were recruited to evaluate the videotaped counseling skills using the ACE. The raters were audiologists with doctorates (Ph.D. or Au.D) and at least five years experience in the specialty of pediatric audiology. All three raters had completed or had taught at least one course in audiologic counseling.

### Procedures

Before videotaping their sessions, students were provided a three-page handout describing “breaking bad news guidelines” from Clark and English (2004). The sessions took place in a standard consultation room. Because the room was fairly small, with a video camera and operator at one end, there was little opportunity to rearrange furniture, so two chairs were positioned at one end of the room for each session. Students were instructed to lead the “mother” into the room, inform her of their hypothetical test results, and answer her questions. The mother held a doll wrapped in blankets throughout the sessions. No time limit was enforced; the students themselves indicated when the session was over. The sessions ranged from 6:10 to 11:10 minutes (mean = 8:10 mins). All students accepted the offer of feedback in private debriefing sessions. They also completed a feedback form about the simulation experience.

One videotaped consultation was selected for training purposes. After viewing the consultation and using the assessment tool, the first two investigators compared their scores in order to identify vague wording and possible scoring dilemmas. The investigators modified the ACE accordingly and then trained the three raters via teleconference following the same procedures (i.e., rating the first videotaped session with the ACE). After the 30-45 minute training, each rater independently rated the remaining nine counseling consultations and completed one assessment for each session. Taped sessions could be replayed as often as necessary. After rating the nine sessions, raters completed an evaluation of the tool

with respect to ease of use, clarity of language, use of the Likert scale, etc.

### Instrument

The ACE has 22 questions with 77 desirable behaviors identified in counseling literature and by peer reviewers. The questions are organized into seven categories, according to the recommended steps for discussing difficult news (with number of questions per step):

- Getting Started (N = 3)
- Breaking the News (N = 3)
- Assessing Parents' Understanding of/Reaction to the Situation (N = 4)
- Eliciting Concerns (N = 3)
- Giving a Time Frame for Action (N = 2)
- Suggesting Specific Actions While Waiting for the Follow-Up Appointment (N = 2)
- General Considerations (N = 5)

The raters used a five-point scale to evaluate each skill and were also given a set of suggestions to help the user expand on the ratings for teaching purposes (for example: "The audiologist might have made eye contact first before speaking, spoken more slowly, attended to parent's body language," etc.).

### Analyses

Sample size calculations were based on a .05 significance level, a desired power of .8, and an estimated effect size of .25. Nine simulated counseling sessions were needed to provide a sufficient number of counseling examples for raters to evaluate across 22 criteria and to complete the correlational analyses among raters (Tinsley and Weiss, 2000). Internal-consistency reliability of the ACE was measured using Cronbach's alpha statistic to measure the overall correlation between the individual answers to questions and the total scores (a value of "1" indicating perfection correlation and a value of "0" indicating no correlation).

Inter-rater reliability was calculated among three pairs of raters (that is, Rater 1 vs Rater 2, Rater 2 vs Rater 3, and Rater 1 vs Rater 3). Using multiple raters is a recommended strategy when looking to use reliability data to improve measurement quality (Light et al, 1991). Inter-rater reliability was examined in two ways. First, all sessions' total scores were ranked and

divided into quartiles. This quartile method is consistent with the way standardized patient test results are reported, in one of four categories (outstanding, pass, borderline, and fail). The weighted Kappa (*K*) statistic was used to calculate the level of agreement between raters using these four categories. This measure describes the extent to which agreement between raters is better than might be expected by chance (a value of "0" representing only chance agreement and "1" perfect agreement).

Because the weighted *K* statistic does not provide data on the source of any disagreement, a two-way analysis of variance (ANOVA) was conducted to calculate the Intraclass Correlation Coefficient (ICC) (Shrout and Fleiss, 1979; Brennan and Silman, 1992). Intraclass correlation evaluates the level of agreement between raters when using parametric measurements. This method is recommended when more than two raters are used. Variation in the total scores may be due to the differences in students' interviews, the raters, or by scores different raters give for the same students (student x rater interaction).

Two items were deleted from the data analysis. Question 1 asked, "Did the audiologist arrange the environment well?" Because the room was small, students had no options regarding the environment, so this item was not relevant to the situation. In addition, Question #12 asked, "How many of the parent's concerns were expressed?" This question was a calibration question, to verify that raters were watching for the actress's intent to convey a set of "sample concerns." Raters were in 100% agreement on this item, but it was not an item needed to evaluate counseling skills.

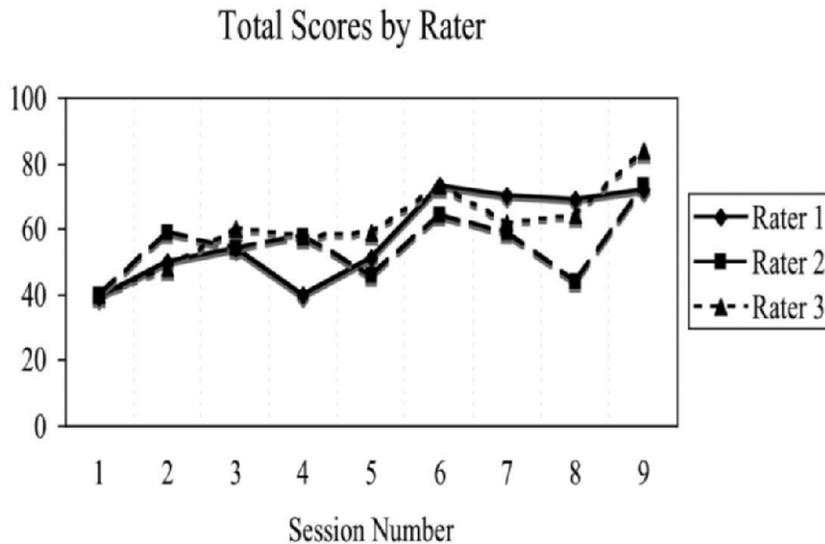
## RESULTS

### Internal Consistency

The Cronbach's alpha score for the ACE was 0.91, indicating a high level of internal consistency.

### Inter-rater Reliability

The total scores for each of the raters for the nine videotaped consultations are



**Figure 1.** Total scores of nine interviews by three raters.

shown in Figure 1. The level of agreement of total scores, calculated by the weighted  $K$  statistic, is shown in Table 1. The agreement between the three pairs of raters ranged from moderate to good. The values for the ICC, calculated from the ANOVA, are shown in Table 2. Sixty-six percent of the variance seen in the scores can be attributed to differences among students. The ICC values approximate the values of agreement calculated by the weighted  $K$ , which is expected when Likert data are ordered categorically (Muller and Buttner, 1994).

### Raters' Evaluation of the ACE

After viewing and rating all sessions, the raters evaluated the instrument and scoring process. Results were somewhat mixed. The first two statements and responses were as follows:

- This instrument was easy to use (Agree = 1; Disagree = 2).
- Instructions on using this instrument were easy to understand (Agree = 1; Undecided = 1; Disagree = 1).

Follow-up comments indicated that the

scoring system was confusing because it contained both a 5-point Likert scale plus descriptive words ("Not at all" to "Always") at the extremes of the scale to indicate the direction of the continuum. It was not clear to all raters whether the words themselves were actually part of a 7-point scale. This concern did not present itself during rater training, but this helpful feedback resulted in a change in the design, and the descriptors are now placed above the 5-point scale to eliminate confusion. It is possible that by using this amended scoring system, we might have obtained even better inter-rater reliability.

Raters also responded to the following statements:

- This instrument captures key counseling issues of informing parents of their child's hearing loss. (Agree = 2; Strongly Agree = 1)
- This instrument is flexible, allowing the evaluator to include his/her own concerns. (Agree = 3)
- I would use this instrument to evaluate student counseling skills in this situation. (Agree = 2; Undecided = 1).

**Table 1.** Inter-Rater Reliability

Raters 1 & 2	0.572
Raters 1 & 3	0.673
Raters 2 & 3	0.614

Brennan & Silman, 1992: 0.81-1.00 = excellent  
0.61-0.80 = good  
0.41-0.60 = moderate  
0.21-0.40 = fair  
<.20 = poor

**Table 2.** Proportion of Variance Due to Students, Raters, and Students x Raters Interaction

Source	Proportion of Variance
Students	.662
Raters	.019
Students X Raters	.319
Total	1.00

## Students' Evaluation of the Counseling Simulation

After the simulated counseling session, each student completed a questionnaire. All students agreed or strongly agreed with the following statements:

- The simulated parent consultation helped me identify my strengths and areas in which I can improve in audiologic counseling;
- The debriefing session provided additional instruction;
- This practice session was a helpful learning experience; and
- This kind of practice session will help other audiology students.

## DISCUSSION

This study described the process of developing an instrument (Audiologic Counseling Evaluation [ACE]) designed to provide a structured rating of audiologic counseling skills. The original scoring system (presented in its corrected form) caused some confusion, yet raters were still reliable in their evaluations of simulated counseling sessions using the ACE. The instrument has moderate-to-good reliability, and most of the variability, as might be expected, was attributed to differences in skills demonstrated by the students being evaluated. Results were very similar to the reliability attained for the original "breaking bad news" scale designed by Miller et al. (1999).

For teaching purposes, this scale can help identify students' areas of strengths and weaknesses in the area of counseling, primarily as a feedback mechanism. Since the ACE demonstrated high internal consistency, the use of an overall score provides an effective basis for evaluating overall competence (range being 22 to 110).

This first component of the ACE can be used by faculty and clinical instructors to help students focus on the skills needed to convey the diagnosis of a child's hearing loss to parents. Additional instruments are being developed to help train students in other audiologic counseling challenges as well (e.g., angry patients; patients whose family members dominate the conversation; teens struggling with "fitting in," etc.). Audiology's scope of practice includes providing "counseling regarding the effects of

hearing loss on communication and psychosocial status in personal, social, and vocational arenas" (American Academy of Audiology, 2004). As Luterman (2001) has been saying for many years, counseling skills are too important to be left to chance, or to assume that students will "pick it up as they go along." It is incumbent upon graduate training programs to provide direct instruction, modeling, evaluation, and constructive feedback to students as they prepare to interact with patients. The ACE provides one mechanism for this kind of training. The finalized ACE is available on the Internet: <http://gozips.uakron.edu/~ke3/ACE.pdf> and <http://www.chp.cmich.edu/cdo/faculty/susan-naeve-velguth.htm>.

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E. *Giving a Time Frame for Action.* This section looks at the audiologist's ability to describe upcoming events. The audiologist will want to convey the need for action while respecting the parents' need to regain control of their family lives.

14. Did the audiologist describe the steps that the family will need to take in the near future (scheduling follow-up appointments, using amplification, choosing communications modes)?

Not at all				Definitely
1	2	3	4	5

The audiologist might have:

- been more specific (how, when, why) about scheduling a follow-up appointment.
- been more specific about the purpose of the follow-up appointment.
- checked to ensure the parents perceived the need for timeliness.
- Other: \_\_\_\_\_

15. Did the audiologist provide management choices for the parents?

Not at all				Definitely
1	2	3	4	5

The audiologist might have:

- asked if the parents would like to bring support (grandparents, etc.) to upcoming appointments.
- asked if the parent would prefer to start remediation procedures immediately (e.g., make ear mold impressions now) or wait for the next appointment.
- supported the parent's right to seek a second opinion.
- Other: \_\_\_\_\_

F. *Suggesting Specific Actions While Waiting for the Follow-up Appointment.* Parents have reported that the time between the diagnostic consultation and follow-up appointments can add to their stress when they have nothing to do but wait. This section evaluates the audiologist's ability to provide concrete suggestions about activities parents can do between appointments, if they are so inclined.

16. Did the audiologist suggest a set of activities to consider between appointments?

Not at all				Definitely
1	2	3	4	5

The audiologist might have:

- suggested parents keep a log of their child's responses to sounds, describing the sounds and the child's responses.
- provided a sample log for parental use.
- provided introductory written/video material about hearing and hearing loss.
- asked if parents would like to contact veteran parents.
- asked if parents would prefer to have veteran parents initiate a contact.
- Other: \_\_\_\_\_

17. Did the audiologist provide "first reminders" about attending to all aspects of the child's development, not just the hearing loss?

Not at all				Definitely
1	2	3	4	5

The audiologist might have:

- encouraged parents to continue communicating (talking, responding) to the child as before.
- encouraged parents to think about sustaining the bonding process.
- provided written material about general child development.
- Other: \_\_\_\_\_



**Appendix B.**

**“Concern List” for Parents**

1. Are you sure?
2. Did I cause this somehow?
3. Will my child talk?
4. What should I do now?
5. Shouldn't I get a second opinion?
6. How many children have you tested?
7. Can this be fixed? Is there a surgery or medicine to fix this problem?
8. Will my baby have to wear a hearing aid?
9. Might my other/future children have hearing loss too?
10. How will we communicate with him/her?