An Assessment Scale of Hearing Handicap for Use in Family Counseling

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Jerome G. Alpiner
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Counseling of the hearing-impaired adult should include family members. While many attempts have been made to assess the handicapping effects of hearing impairment on an individual, to date there has been no systematic tool for assessing the attitudes of family members. This study involves the development of a self-assessment tool to measure the psychological, social and vocational effects of hearing impairment as reported by the hearing-impaired individual and a family member. Use of the scale for family counseling is discussed.

The handicapping effects of hearing impairment acquired during adulthood have been of concern to audiologists for several decades. Yet traditional dependence on audiometric data for prognostic and rehabilitative purposes has proven inadequate as illustrated in the classic example of two hearing-impaired adults with identical audiograms and very different communication problems. The limitations of depending solely on audiometric information has led to the consensus that effective aural rehabilitation programs cannot be developed without information about the hearing-impaired individual's attitudes and communication functioning. Indeed, the recent proliferation of hearing handicap assessment scales suggests audiologists are attempting to develop individualized aural rehabilitation programs based on the unique needs of the individual hearing-impaired person.

Perhaps the initial attempt to quantify the functional effects of hearing impairment was the Social Adequacy Index (Davis, 1948). However, this early attempt was limited in its reliance on two audiometric measures — the speech reception threshold and speech discrimination score. Since that time, researchers have chosen to utilize a self-report format to augment audiomet-

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ric data. These assessment scales have attempted to provide information about the impact of hearing impairment on the individual by rating its effects in various situations. The major scales developed to date include: the Hearing Handicap Scale (High, Fairbanks, & Glorig, 1964), the Hearing Measurement Scale (Noble & Atherly, 1970), the Social Hearing Handicap Index (Evertsen & Birk-Nielsen, 1973), the Denver Scale of Communicative Function (Alpiner et al., 1974), the Profile Questionnaire for Rating Communicative Performance in Various Environments (Sanden, 1975), the Hearing Performance Inventory (Giolas, Owens, Lamb, & Schubert, 1979) and the Hearing Handicap Inventory for the Elderly (Ventry & Weinstein, 1982). Each of these scales has contributed to further refinement and development of tools which provide information about the nature and extent of communication handicap.

A review of the self-assessment tools developed to date suggests that the use of a single, comprehensive measure with all hearing-impaired adults may be unrealistic and inappropriate for obtaining some types of information. Consequently, the use of different assessment scales with different individuals might be necessary to obtain appropriate information for rehabilitation planning. With this in mind, this study was undertaken.

If the purpose of self-report scales is to provide information on the effects of hearing impairment on everyday functioning for rehabilitative planning and management, then it is imperative that the scales provide information for use in counseling. Informational and affective counseling are both well-accepted elements of adult rehabilitation. Therefore, knowledge of the person's counseling needs is essential for effective planning and treatment.

The degree to which the various scales provide information regarding counseling needs varies. However, an underlying principle in effective counseling appears to have been omitted in all of the presently used assessment scales; i.e., the effects of hearing impairment are not simply limited to the individual, but rather influence the entire family (Pollack, 1978). Therefore, if counseling is to be effective, inclusion of family members in the counseling process is vital.

Based on this premise, it was hypothesized that a family member's assessment of the handicapping effects of the hearing impairment could provide invaluable, additional information for counseling purposes. The purpose of this study, therefore, was to develop a self-assessment tool to measure the handicapping effects of hearing impairment as reported by the hearing-impaired individual and a family member.

METHOD

Scale Development

In order to acquire information for use in counseling, three areas of interest were assessed in the scale developed: the psychological, social and
vocational effects of adult hearing loss. The authors generated 190 items representing aspects of each of these areas and organized them into a self-assessment questionnaire format. The items were presented in statement form and required a written response indicating the appropriate choice. Response choices were always, usually, sometimes, rarely or never. Wording of the items included positively worded (e.g., I admit I have a hearing loss to most people) and negatively worded (e.g., I tend to avoid people because of my hearing loss) items in order to eliminate response biases. Responses were weighted from 1-5 so that a response representing maximum handicap was assigned 5 points. For example, a response of “NEVER” to a positively worded item and a response of “ALWAYS” to a negatively worded item would each carry 5 points, suggesting an area of difficulty for the individual.

The initial form of the scale was administered to 100 adults (21-80 years) with acquired sensorineural hearing loss of 30 dB HL or greater at two or more octave interval frequencies from 250-4000 Hz in the better ear. Subjects had no previous aural rehabilitative therapy but had all undergone an audiological evaluation within six months prior to completion of the scale. In order to determine the test-retest reliability of each of the items, a randomized form of the scale was readministered to these same subjects after two weeks. Pearson product-moment correlation coefficients were computed and 34 items fit the proposed criteria of .80 or higher correlation. Items which did not fit this criteria were eliminated. Internal consistency was also assessed for these 34 remaining items using Cronbach’s alpha method. Good consistency was suggested by the .81 coefficient. Based upon the high degree of reliability demonstrated, these 34 items were incorporated into the final version of the scale.

Scale Administration

Sixty additional subjects conforming to the criteria described in the initial part of the study were administered the 34 item scale. Psychological (items 41-10), social (items 11-24), and vocational (items 25-34) effects of hearing impairment were assessed (Appendix A, Form A). In addition, a family member of each of the subjects completed a parallel form of the scale which differed from the subject’s form by presenting items in third person format (Appendix B, Form B). The family members were required to be adults who resided in the same household as the subject. In order to eliminate discussion and/or collaboration, the scales were administered by the authors in person.

Analysis Procedures

Correlation coefficients were computed for the psychological, social, and vocational subsections of the scale by comparing the responses of the hearing-impaired subjects with the responses of the family members. Each subject’s subsection rating totals were calculated and then correlated with
subsection totals for her/his family member. Overall sample correlations were cast into a matrix table for analysis. In addition, internal consistency (Cronbach's alpha) was estimated for each of the three subsections for both the hearing-impaired subjects and the family members.

RESULTS AND DISCUSSION

Results of reliability testing are shown in Table 1. The high correlations obtained for each of the three subsections showed consistency and stability for the scale administered to the hearing-impaired subjects (Form A) and to the family members (Form B) as measured by Cronbach's alpha. The high degree of internal consistency suggested the items were assessing two sets of prevailing attitudes representing the psychological, social, and vocational effects of hearing impairment. In combination with the high test-retest reliability shown with these items, this scale appears to be a reliable measurement tool.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Reliability Results Using Cronbach's Alpha Method for Each of the Subsections for the Self-Assessment Scale (Appendix A, Form A) and the Family Member Assessment Scale (Appendix B, Form B)</th>
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<tbody>
<tr>
<td></td>
<td>Self-Assessment</td>
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<tr>
<td>Psychological Subsection</td>
<td>.79</td>
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<tr>
<td>Social Subsection</td>
<td>.87</td>
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<tr>
<td>Vocational Subsection</td>
<td>.79</td>
</tr>
</tbody>
</table>

Table 2 displays the correlation coefficients obtained in comparing the responses of the 60 hearing-impaired subjects and their family members. These data suggest an overall low level of agreement between the subjects and family members for items representing the psychological, social, and vocational parameters. Inspection of the table suggests a relatively higher degree of agreement for the psychological subsection. However, a coefficient of .43 cannot be accepted as an indicant of strong agreement.

The low correlations obtained suggest that the relationship between the responses of the subject and family members was not strong. However, this information should not be discounted as negative. The differences detected by this study may provide important information on which to base effective family counseling in the aural rehabilitation process.

The reasons for the disparity in the responses of these two groups should be examined. In interpreting the results, it should be remembered that while the perceptions of feelings and behaviors may be very different for a hearing-impaired individual and her/his family member, a judgment cannot
be made that one position is accurate and the other is delusional. This study required that the subject introspectively assess her/his own feelings and behavior while the family member was asked to respond "objectively" about the hearing-impaired individual. Each individual's perceptions of a situation were shaped by her/his own life experience. Inasmuch, the differences in responses demonstrated on this scale may have been the results of multiple processes related to family dynamics.

First, the hearing-impaired subject may have failed to accept, understand, or deal with her/his hearing problem. Yet her/his family member may have been keenly aware of and strongly affected by the hearing impairment. Second, the subject and/or family member may have been unable to recognize, understand, or cope with the hearing impairment. Third, the two may have failed to agree on the identification of problem areas and the behaviors associated with them. Or finally, any combination of these may have occurred.

Therefore, because the individuals in this study were closely involved in the problem being examined, it would be erroneous to assume that agreement should occur on items which represent such emotionally charged topics. Rather, the information obtained relative to disagreement on these issues suggests areas in need of family counseling.

Tyler (1969) describes counseling as the process of helping a client make a decision in such a way as to maximize the probability that her/his future development will be satisfactory and useful. In other words, counseling emphasizes the development of possibilities in dealing with a problem area. For the hearing-impaired individual, counseling can lead to satisfactory adjustment by providing options for dealing with the hearing loss.

Any discussion of options available to the hearing-impaired individual must be realistic in terms of the person's total life situation. Because of this, the inclusion of family members is both logical and wise as advocated. Indeed, the Committee on Rehabilitative Audiology as published in ASHA...
(1980, p. 461) proposed that professionals providing aural rehabilitation should demonstrate a special knowledge of "... counseling information and techniques used with hearing-impaired persons and their families in matters relating to management of psycho-social, educational-vocational, communication, and economic problems associated with hearing impairment." Further support for inclusion of family members in counseling is furnished by Oyer (1982). He recommends that future efforts in aural rehabilitation should focus on the personal and interpersonal problems associated with acquired hearing loss in adults with particular attention to such variables as marital tensions and family solidarity. This study represents an initial effort to systematically determine the attitudes and relationships of hearing-impaired individuals and their families. As such, knowledge of these attitudes provides a basis for effectively providing options for dealing with the hearing impairment to both the individual and family members.

Additional research with this scale is recommended and ongoing. The low correlations obtained should be further examined by administering Form B to additional family members and/or friends. Examination of responses between family members themselves could provide interesting information about scale construction as well as family dynamics. For example, comparisons of the responses of the wife and the son of a hearing-impaired man might reveal important differences in their reactions to the hearing impairment. Results might also suggest closer agreement with the hearing-impaired individual for one family member or the other. In addition, further item analysis is needed in terms of the influence of wording and content on the low correlations obtained. In particular, the influence of negative versus positive phrasing of items should be investigated. Results of these additional analyses will perhaps lead to modification and/or expansion of each of the subsections. In its present form, however, the scale can provide direction for the audiologist by highlighting the unique needs of the hearing-impaired individual and her/his family. By administering both forms of the scale, a comparison of the responses can be undertaken. To facilitate scoring, a profile form has been developed which provides a visual representation of the responses from both forms (Appendix C).

CONCLUSION

In conclusion, as an important part of the aural rehabilitation process, it is essential that counseling include family members. In order to provide effective counseling, it is necessary to identify the effects of the hearing impairment on both the hearing-impaired person and her/his family. The scale developed in this study systematically assessed the attitudes and reactions of hearing-impaired adults and their family members. The results support the need for inclusion of family members in counseling and help to provide a basis for aural rehabilitation planning and management.
REFERENCES


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APPENDIX A

THE McCARTHY-ALPINER SCALE OF HEARING HANDICAP
(THE MA SCALE)

by
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University of Georgia, Athens, Georgia

and
Jerome G. Alpiner, Ph.D., Director, Speech & Hearing Department
Pomer Memorial Hospital, Denver, Colorado

FORM A

Name: ________________________________ Date: ________________________________

Age: ____________ Sex: ____________ Time: ____________

Occupation: __________________________________________ Phone: __________________

Address: ______________________________________________

Starting Aid: Yes No: ____________ Usually of Hearing Loss: ____________


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Typ: ________________________
Now Long: ________________________
Satisfaction: ________________________

Audiogram:
Date of Examination: ________________________
Examiner: ________________________
Category of Hearing Loss: ________________________

Right Ear

250 Hz 500 Hz 1000 Hz 2000 Hz 4000 Hz 8000 Hz
Air

Bone

Left Ear

250 Hz 500 Hz 1000 Hz 2000 Hz 4000 Hz 8000 Hz
Air

Bone

Speech Reception Threshold
Right Ear ___________ dB HL
Left Ear ___________ dB HL

Speech Discrimination:
Right Ear ___________ dB HL
Left Ear ___________ dB HL

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DIRECTIONS

The following questionnaire will be used to help audiologists understand what it is like to have a hearing loss and the effects of a hearing loss on your life. You are asked to give your reaction to each of the statements included in the questionnaire. For example, you might be given this statement:

People avoid me because of my hearing loss

Always Unusually Sometimes Rarely Never

You are asked to mark your reaction to the statement with an X on the appropriate space. Please mark every item with only one answer as seen in the example.

In marking your answer please keep in mind that ALWAYS means at all times or in all occasions. USUALLY refers to generally, commonly or ordinarily. SOMETIMES means occasionally or on various occasions. RARELY refers to seldom or infrequently. NEVER means not ever or a no time.

If you are not genuinely employed, please respond "N/A" for not applicable.

All answers will be kept strictly confidential and used only to help audiologists understand what it is like to have a hearing loss and the effects of hearing loss on your life.

1. I get annoyed when people do not speak loud enough for me to hear them

Always Unusually Sometimes Rarely Never
2. I get upset if I can not hear or understand a conversation.

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

3. I feel like I am isolated from things because of my hearing loss.

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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

4. I feel negative about life in general because of my hearing loss.

<table>
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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

5. I admit that I have a hearing loss to most people.

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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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6. I get upset when I feel that people are “mumbling”.

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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

7. I feel very frustrated when I can not understand a conversation.

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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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8. I feel that people in general understand what it is like to have a hearing loss.

<table>
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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
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9. My hearing loss has affected my life in general.

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<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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10. I am afraid that people will not like me if they find out that I have a hearing loss.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
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11. I tend to avoid people because of my hearing loss.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
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12. People get annoyed when I cannot understand what is being said in a group conversation.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
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13. My family is patient with me when I can not hear.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

14. Strangers react rudely when I do not understand what they say.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
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</table>

15. I ask a person to repeat if I do not hear or understand what he said.

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<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
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<tr>
<td>Question</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
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<tr>
<td>16. My hearing loss has affected my relationship with my spouse.</td>
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<td>17. I do not go places with my family because of my hearing loss.</td>
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<tr>
<td>18. Group discussions make me nervous because of my hearing loss.</td>
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<tr>
<td>19. People in general are tolerant of my hearing loss.</td>
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<tr>
<td>20. I avoid going to movies or plays because of my hearing loss.</td>
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<tr>
<td>21. I avoid going to restaurants because of my hearing loss.</td>
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<tr>
<td>22. I enjoy social situations with considerable conversation.</td>
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<tr>
<td>23. I am not interested in group activities because of my hearing loss.</td>
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<tr>
<td>24. I enjoy group discussions even though I have a hearing loss.</td>
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<tr>
<td>25. My hearing loss has interfered with my job performance.</td>
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<tr>
<td>26. I cannot perform my job well because of my hearing loss.</td>
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<tr>
<td>27. My co-workers know what it is like to have a hearing loss.</td>
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<tr>
<td>28. I try to hide my hearing loss from my co-workers.</td>
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<tr>
<td>29. I do not enjoy going to work because of my hearing loss.</td>
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</tbody>
</table>
30. I am given credit for doing a good job at work even though I have a hearing loss.

   Always  Usually  Sometimes  Rarely  Never

31. I feel more protected at work because of my hearing loss.

   Always  Usually  Sometimes  Rarely  Never

32. My employer understands what it is like to have a hearing loss.

   Always  Usually  Sometimes  Rarely  Never

33. I try to hide my hearing loss from my employer.

   Always  Usually  Sometimes  Rarely  Never

34. My co-workers speak loudly and clearly.

   Always  Usually  Sometimes  Rarely  Never

APPENDIX B

THE McCARTHY-ALPINE SCALE OF HEARING HANDICAP
(The M-A Scale)

by
Patricia McCarthy, Ph.D., Speech Pathology & Audiology
University of Georgia, Athens, Georgia
and
Jerome G. Alpiner, Ph.D., Professor, Speech & Hearing Department
Pioneer Memorial Hospital, Denver, Colorado

**FORM B**

Name: ______________________ Date: ______________________

Age: ________ Sex: ________ Phone: ______________________

Address: ______________________

Relationship to Hearing Impaired Individual: ______________________

Do You Have a Hearing Loss? ________ Yes ________ No

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DIRECTIONS

The following questionnaires will be used to help audiologists understand what it is like to have a hearing loss. A member of your family has a hearing loss. We are interested in finding out what effects the hearing loss has had on his job, his family and the social aspects of his life.

Your task is to give your reaction to each of the statements included in the questionnaires. The items all concern the effects of the hearing loss on your hearing-impaired family member. You are to answer how the hearing loss has affected him in these aspects of his life. For example, you might be given the statement:
<table>
<thead>
<tr>
<th></th>
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If your family member is not presently employed, please respond “N/A” for not applicable. All answers will be kept strictly confidential and used only to help audiologists to understand what it is like to have a hearing loss and the effects the hearing loss has on one’s life.
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<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
</tr>
<tr>
<td>22. He enjoys social questions with considerable conversation.</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
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<tr>
<td>23. He is not interested in group activity because of his hearing loss.</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
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<tr>
<td>24. He enjoys group discussions even though he has a hearing loss.</td>
<td>Always</td>
<td>Usually</td>
<td>Sometimes</td>
<td>Rarely</td>
</tr>
</tbody>
</table>
25. His hearing loss has interfered with his job performance.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

26. He can not perform his job well because of his hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

27. His co-workers know what it is like to have a hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

28. He tries to hide his hearing loss from his co-workers.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

29. He does not enjoy going to work because of his hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

30. He is given credit for doing a good job at work even though he has a hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

31. He feels more pressure at work because of his hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

32. His employer understands what it is like to have a hearing loss.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

33. He tries to hide his hearing loss from his employer.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never

34. His co-workers speak loudly and clearly.
   - Always
   - Usually
   - Sometimes
   - Rarely
   - Never
THE McCArTHY-ALPINEFER SCALE OF HEARING HANDICAP
(THF M-A SCALE)

By
Patricia McCarthy, Ph.D., Speech Pathology & Audiology
University of Georgia, Athens, Georgia

and
Jerome G. Alpiner, Ph.D., Director, Speech & Hearing Department
St. Mary’s Memorial Hospital, Denver, Colorado

Name: ____________________________ SS. #: ____________________________ Age: ____________________________

Date: ____________________________ Sex: ____________________________ Audiologist: ____________________________

### PROFILE FORM

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### PSYCHOLOGICAL

### SOCAL

### VOCATIONAL

**DIRECTIONS:** Items are scored negatively & positively and scored from 1 point to 5 points with 5 points indicating maximum handicap. Negative items are coded as "N" and positive items are coded as "P". For "N" items, calculate always = 3 pts., usually = 2 pts., sometimes = 5 pts., rarely = 1 pt. For "P" items, calculate always = 3 pts., usually = 2 pts., sometimes = 1 pt., rarely = 4 pts., and never = 5 pts.

**LEGEND:**
- Responses of hearing impaired individual = X
- Responses of family member = O