

# **Judgments of Perceived Hearing Handicap by Hearing-Impaired Elderly Men and Their Spouses**

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The role of significant others in the aural rehabilitation process has been acknowledged by professionals in gerontology and related disciplines. Systematic investigation of the spouse's perception of the handicap experienced by a hearing-impaired partner has not yet been conducted with the elderly. The relationship between self-report of handicap by 30 hearing-impaired elderly men and their spouses' perception of handicap was examined using the Hearing Handicap Inventory for the Elderly (HHIE) and a modification of the HHIE for spouses (HHIE-SP). Results showed that the emotional and social effects of hearing impairment as perceived by the hearing-impaired men was generally underrated by the spouses, such that low to moderate correlations between their perceptions of handicap emerged ( $r = .27$  to  $.48$ ). The relationship was affected by hearing loss severity. The findings may be useful in determining rehabilitation and counseling objectives.

The self-perceived handicapping effects of hearing loss due to aging are well documented (Gilad & Glorig, 1979; Marshall, 1981; Weinstein & Ventry, 1983a); however, pure-tone and speech audiometry alone fail to demonstrate handicap (Noble, 1978; Schow & Nerbonne, 1982; Giolas, 1983; Weinstein, 1984a). To quantify perceived handicap, audiologists use a variety of communication profiles and handicap scales because of their availability (Giolas,

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1983; Martin & Sides, 1985; Weinstein, 1984a).

Despite the fact that many aural rehabilitation programs serve the elderly, assessment tools tailored for this population are scarce. The unique psychosocial problems associated with aging and loss of hearing demand a scale designed specifically for the elderly. In response to this demand, Ventry and Weinstein (1982) developed and standardized the Hearing Handicap Inventory for the Elderly (HHIE) on 100 elderly subjects. The HHIE demonstrated excellent internal consistency for the total scale as well as the emotional and social/situational sub-scales ( $\alpha = .88$  to  $.95$ ). Weinstein, Spitzer, and Ventry (1986) recently reported on the high test-retest reliability ( $r > .90$ ) of the HHIE, as well.

A characteristic of the HHIE is that it yields information from the client's perspective. It is important, however, to evaluate the client's judgments against those of significant others. This might identify unrealistic expectations concerning current communication abilities as well as prognosis for improvement. Litwack, Litwack and Ballou (1980) and Sedgwick (1981) have stated that handicapped individuals often seek support and guidance from their spouses. When a husband or wife lacks accurate information or insight into the nature of the problem, the rehabilitation process can be impeded. Several scales such as The Significant Others Assessment of Communication (SOAC; Schow & Nerbonne, 1982) and the McCarthy-Alpiner Scale of Hearing Handicap (M-A; McCarthy & Alpiner, 1983) have been developed to quantify the handicap as perceived by the significant other. In fact, McCarthy and Alpiner (1983) observed a disparity between self- and family-assessed handicap, using the M-A Scales on an adult sample. While the M-A and SOAC scales have high internal consistency, neither has been standardized with the elderly.

The purpose of this study was to modify the HHIE for use by a spouse in order to evaluate differences in perception of hearing handicap from that of the person with the hearing impairment.

## METHOD

### Subjects

Subjects were 30 elderly hearing-impaired males and their spouses. The husbands were out-patients at the Audiology Service of the Cleveland Veterans Administration Medical Center who were undergoing hearing aid evaluation. Twenty-five were new hearing aid users (for the most part their hearing loss was associated with advanced age), and 5 were experienced wearers (2 subjects had worn hearing aids less than 3 years and 3 subjects had worn aids for as long as 14-17 years).

The mean age of the husbands was 71.7 years ( $SD = 6.1$ ) with a range of 65-90 years. The mean age of the spouses was 69.3 years ( $SD = 5.0$ ) with a range of 65-80 years. According to medical records and personal interview, all

of the husbands were free of any neurologic or psychologic disorders and had no evidence of conductive or fluctuating sensorineural hearing loss. The mean three frequency pure-tone average (PTA) of their better ears (Table 1) was 42.8 dB HL (ANSI, 1969) ( $SD = 18.6$ ) with a range of 20 to 95 dB HL. Based on the better ear, 5 (17%) of the husbands had a PTA within normal limits (0-25 dB HL) unilaterally, 12 (40%) had a mild loss (26-40 dB HL), 7 (23%) moderate (41-55 dB HL), and 6 (20%) moderately severe or poorer ( $\geq 55$  dB HL). For those subjects with normal hearing in one ear, the PTA for the opposite ear (i.e., poorer ear) ranged from 30 to 110 dB HL. The mean supra-threshold score for the 30 men on the CID W-22 word lists in the better ear was 75.2% ( $SD = 16.0$ ).

**Table 1**  
Better-Ear Pure-Tone Thresholds (in dB Hearing Level)  
For 30 Hearing-Impaired Subjects

	Frequency (Hz)					
	250	500	1000	2000	4000	8000
<i>M</i>	28.7	31.3	40.3	56.5	73.5	79.5
<i>SD</i>	16.4	17.5	22.1	20.4	19.6	11.5
Range	10-80	10-80	15-100	20-105	40-100	50-80

### Material and Procedure

The HHIE is a 25-item self-assessment scale composed of a 13-item emotional sub-scale and a 12-item social/situational sub-scale. A modification of the HHIE, called the HHIE-Spouse (HHIE-SP) was developed in the present study for use by the spouses of the hearing-impaired subjects. The HHIE-SP was identical to the HHIE except for the substitution of "your spouse" for "you" in each question (see Appendix). On both scales, a *yes* response received 4 points, *sometimes* 2 points, and *no* 0 points. Possible scores on the total scale ranged from 0, suggesting no handicap, to 100, indicating significant handicap. Additional information regarding the HHIE and its audiometric correlates is available in Weinstein and Ventry (1983b).

The HHIE and HHIE-SP were administered individually prior to a hearing aid evaluation in a face-to-face interview with each husband and wife separately in order to avoid any collaboration. The items were read to each subject who was asked to respond according to the instructions accompanying the scale. When necessary, subjects wore their hearing aids and in one case an auditory trainer was used to facilitate the flow of the interview.

Each hearing-impaired subject underwent routine pure-tone air and bone conduction testing as well as speech testing upon completion of the face-to-face interview.

## RESULTS

As shown in Table 2, mean HHIE scores of husbands were on average higher than those of wives. That is, the hearing-impaired individuals tended to judge their hearing loss to be more handicapping than did their spouses. Independent t-tests indicated statistically significant differences between groups for the total scale and both sub-scales (Table 2) (Linton & Gallo, 1975). Pearson product-moment correlations were calculated to determine the degree of relationship between responses obtained by husbands and by wives. Results showed a moderate and statistically significant ( $p < .05$ ) correlation between groups for the total scores ( $r = .48$ ) and social/situational scores ( $r = .45$ ), while the relationship between the emotional sub-scale scores for the two groups was weak ( $r = .27$ ). The Index of Determination ( $r^2$ ) indicated that only 23%, 20%, and 7% of the variance in the wives' scores was accounted for by the husband's actual perception of handicap on the total, social/situational, and emotional scales respectively.

**Table 2**  
Scores for Husbands (N = 30) and their Wives (N = 30)  
on the Hearing Handicap Inventory for the Elderly (HHIE)  
and Hearing Handicap Inventory for the Elderly-Spouse (HHIE-SP)

	HHIE (Husbands)	HHIE-SP (Wives)	<i>t</i>
Total Scale <sup>a</sup>			
<i>M</i>	62.6	49.0	2.50*
<i>SD</i>	19.4	23.0	
Range	28-96	10-96	
Emotional Sub-scale <sup>b</sup>			
<i>M</i>	31.0	24.0	2.02*
<i>SD</i>	12.3	13.9	
Range	6-50	0-52	
Social/Situational Sub-scale <sup>c</sup>			
<i>M</i>	31.3	24.8	2.49*
<i>SD</i>	9.9	11.0	
Range	16-48	6-44	

\* $p < .05$  (two-tailed)

<sup>a</sup> Maximum score = 100.

<sup>b</sup> Maximum score = 52.

<sup>c</sup> Maximum score = 48.

Pearson product-moment correlation coefficients were also obtained to compare the responses to the HHIE and HHIE-SP as a function of the husband's hearing loss. Forty dB HL in the better ear was selected to divide the husbands into two groups because of previous findings indicating that a

majority of elderly persons report some degree of handicap above this level (Weinstein & Ventry, 1983b). For those with unilaterally normal PTA or a mild hearing loss, similar correlations between the hearing-impaired subjects and their spouses were obtained for the social/situational ( $r = .36$ ) and emotional ( $r = .40$ ) sub-scales. In contrast, for those husbands with moderate or severe hearing impairment, the social/situational sub-scale revealed a higher correlation coefficient ( $r = .53$ ) in comparison to the emotional ( $r = .22$ ) sub-scale.

To examine the effects of hearing aid usage on the perception of hearing handicap, the subject groups were divided into new ( $n = 25$ ) and experienced ( $n = 5$ ) hearing aid wearers, and wives of new ( $n = 25$ ) and experienced ( $n = 5$ ) hearing aid users. While mean PTA for the better ear was similar for the new ( $M = 44.2$  dB HL;  $SD = 19.9$ ) and experienced ( $M = 38.6$  dB HL;  $SD = 9.2$ ) wearers, the mean HHIE scores for the experienced users indicated less handicap (emotional = 25.6; social/situational = 29.2) than the mean values for new wearers (emotional = 32.1; social/situational = 32.2). However, the mean scores on the HHIE-SP for the wives of new (emotional = 23.8; social/situational = 25) and experienced users (emotional = 26; social/situational = 24) were nominally more comparable.

## DISCUSSION

A group of hearing-impaired elderly men tended to perceive their hearing loss as more handicapping than did their wives as indicated by scores on the HHIE and a modified version for spouses, the HHIE-SP. As noted by McCarthy and Alpiner (1983), differences in the perception of hearing handicap between a hearing-impaired person and a significant other do not indicate that judgments by one or the other party are either accurate or inaccurate. Although an individual may be affected by a family member's hearing loss, the spouse may not be able to understand the total impact of hearing loss on a hearing-impaired person's psycho-social well being. Further, the mean scores obtained on the HHIE and its sub-scales using these subjects, who were all male and all veterans, were higher than those obtained in previous investigations with a more varied and younger subject pool (Weinstein & Ventry, 1983b; Weinstein, 1984b). The differences are most likely due to subject selection.

Correlation analysis revealed a weaker relation between responses on the HHIE and on the HHIE-SP for the emotional sub-scale compared to the social/situational sub-scale. These results suggest that situational problems encountered by a hearing-impaired individual are more observable and, therefore, more easily identified by the spouse than are emotional responses. Personality factors also probably influence the extent to which one shares his/her emotions. Wording of items comprising the social/situational scale of the HHIE (e.g., "Does a hearing problem cause you difficulty when listening

to TV or radio?") may trigger recall of these observable behaviors more so than that of the emotional items (e.g., "Does a hearing problem cause you to feel left out when you are with a group of people?").

Severity of hearing loss also affected both degree of handicap and its manifestations. As suggested in the preliminary analysis discussed above, individuals with a mild to moderate hearing loss may compensate in otherwise handicapping situations. Persons with moderate or severe hearing loss may also be able to handle social/situational problems, but their wives may be unaware of these husbands' emotional response to such severity of loss. Weinstein (1984b), in an item analysis of responses to the HHIE, reported that, with increased severity of loss, the proportion of people reporting some social/situational effects increased substantially, confirming the present finding of moderate agreement between wives and husbands with more severe hearing loss.

When used clinically, an item analysis of the discrepancy or agreement between the HHIE and HHIE-SP may be helpful in identifying specific emotional and social/situational problems that can shape counseling objectives and other rehabilitation efforts to the individual needs of both partners. This is based on the premise that successful rehabilitation, including ultimate benefit derived from hearing aid usage, can be accomplished only after specific problem areas are resolved.

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**APPENDIX**

Example of questions from the 25-item Hearing Handicap Inventory for the Elderly-Spouse, which is a modified form of the Hearing Handicap Inventory for the Elderly. Item numbers preceded by S are from the social/situational sub-scale; E denotes emotional sub-scale items.

	YES (4)	SOME- TIMES (2)	NO (0)
S-3. Does a hearing problem cause your spouse to avoid groups of people?	_____	_____	_____
E-9. Does your spouse feel handicapped by a hearing problem?	_____	_____	_____
S-10. Does a hearing problem cause your spouse difficulty when visiting friends, relatives, or neighbors?	_____	_____	_____
S-15. Does a hearing problem cause your spouse difficulty when listening to TV or radio?	_____	_____	_____
E-20. Do you feel that any difficulty hearing limits or hampers your spouse's personal or social life?	_____	_____	_____

Modified from the Hearing Handicap Inventory for the Elderly (Ventry & Weinstein, 1982).