

The Effect of Letters on Requests for Clinic Services Following Hearing Aid Prescription

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The purpose of this study was to determine if subjects who were sent letters periodically during the seven months following a hearing aid evaluation would contact the prescribing center more frequently to resolve hearing aid related problems, and report greater satisfaction, than subjects receiving no such letters. Subjects were 35 hearing-impaired adults, 18 of whom received letters. These letters did not lead to more frequent contacts with the center. A telephone interview eight months after the hearing aid evaluation indicated that subjects tended to contact their hearing aid dealer or do nothing. Results suggest that prescribing facilities should consider more aggressive follow-up policies as well as hearing aid dispensing programs.

Among the estimated 16 million hearing-impaired individuals in the United States, it has been approximated that only 19%, at best, use hearing aids (Goldstein, 1984). Many investigators have attempted to isolate the subject attributes and other factors associated with hearing aid satisfaction, benefit, and use (Franks & Beckman, 1985; Gaitz & Warshaw, 1964; Surr, Schuchman, & Montgomery, 1978). One factor considered in continued hearing aid use is that of follow-up services. It has been suggested that the high rate of hearing aid use in Denmark may be attributed to a comprehensive follow-up program (Brooks, 1972).

The existence and degree of follow-up among facilities varies widely (O'Neill, 1988) and few studies address the question of whether or not follow-up is beneficial and, if so, which type of follow-up is the most effective and efficient. In a study by Aasen (cited in Ward, Tudor, & Gowers, 1978) a group of 120 patients receiving follow-up services used their hearing aids significantly more often than 124 clients not receiving follow-up. Surr et al. (1978) compared 192 clients participating in an intensive 2-week residential program with 235 clients who received only a 2-hour hearing aid orientation. Frequency of use was found to be greater in the first group, although treatment effects were confounded by other factors. The residential program was directed toward active duty personnel whereas the short program was directed toward retired personnel. In addition to age differences, differences in motivation between the two groups may have been a

factor. Contrary to the above studies, a study by Ward et al. (1978) revealed no differential effects due to hearing aid orientation. Degree of follow-up treatment varied among three groups of clients from simply a hearing aid prescription to four 2-hour orientation sessions.

One of the problems associated with follow-up treatment is that clients frequently do not avail themselves of the service (Alberti, Pichora-Fuller, Corbin, & Riko, 1984; Kapteyn, 1977; Owens, Gerber, & Uken, 1978; Surr et al., 1978). Ward et al. (1978) noted that, in their study, none of the subjects in the four-session group attended all four sessions. That clients do not return for follow-up is not necessarily an indication that they are satisfied with, and benefiting from, their hearing aids. Alberti et al. (1984) sent letters at one month and one year following a hearing aid evaluation, recommending a hearing aid check. They found afterwards through telephone interview that over half of those contacted who did not keep their one-year appointments were not satisfied with their aids. Likewise, Hosford-Dunn and Baxter (1985) found that all of their 65 subjects reported satisfaction near the end of a 30-day hearing aid trial, yet fewer than 60% were satisfied when asked three months later.

It may be that follow-up must continue beyond the period immediately after hearing aid purchase, with periodic reminders of service availability (e.g., clarification of hearing aid-related questions, hearing aid adjustments, and aural rehabilitation classes). The purpose of the present investigation was to determine if subjects who are sent letters following their hearing aid evaluation are more likely to (a) purchase a hearing aid and retain the aid at the end of a trial period, (b) return to the center to resolve problems, and (c) report greater satisfaction, than subjects who receive no such letters.

METHOD

Subjects

Subjects were 35 hearing-impaired adults who came to a non-dispensing college speech and hearing clinic for a hearing aid evaluation and met the following selection criteria: (a) age 50 years or older and (b) unaided speech recognition thresholds no worse than 65 dB HL (ANSI, 1969) in the aided ear. These characteristics were chosen because they reflect the majority of clients seeking amplification. Each subject was assigned to one of two groups such that groups would be equivalent on (a) age; (b) unaided speech recognition threshold in the aided ear, or better ear if fit binaurally; (c) previous hearing aid use; and (d) type of fitting (i.e., monaural or binaural). Group data on these variables appear in Table 1.

Procedure

All clients were seen for an audiological evaluation which consisted of pure tone thresholds, speech audiometry, immittance testing, and a recommendation for a hearing aid evaluation. Four weeks later, letters were sent to remind these clients to make an appointment for a hearing aid evaluation, or to call if they had further questions. Clients who completed the hearing aid evaluation were provided with a hearing aid prescription and a list of local hearing aid dealers. The importance of contacting the center for a free hearing aid check following purchase (and before the end of a 30-day trial period) was discussed. Clients who returned for a hearing aid check were evaluated using functional or real ear gain measurements and speech recognition tests, and their handling of the aid was refined. Clients' subjective impressions and their questions were discussed at

Table 1
 Characteristics of Experimental (E, $n = 18$) and Control (C, $n = 17$) Subjects

	<i>E</i>	<i>C</i>
Speech Recognition Threshold (dB HL) <i>M</i>	46.7	42.0
Range	(25-65)	(5-60)
Age (yrs) <i>M</i>	71.7	74.1
Range	(55-83)	(53-91)
Hearing Aid Use (no. of subjects)		
New owner	15	14
Previous owner	3	3
Type of Fitting (no. of subjects)		
Monaural	16	16
Binaural	2	1

this time. They were advised that use of hearing aids requires a period of adjustment and that the center should be contacted regarding future questions or problems.

Subjects in the experimental group, in addition to the above, were sent four letters, at 1, 2, 3, and 7 months after the hearing aid evaluation. In the first letter, they were reminded to make an appointment for their free hearing aid check. In the next three letters, they were encouraged to contact the center if they were having any problems or had any questions. They were also informed of the center's commitment to their successful adjustment to the aid. A record was kept of all contacts from subjects. Eight months after the hearing aid evaluation, subjects from both groups were contacted by telephone by the investigators and asked to respond to questions about their use of and satisfaction with the hearing aid, as well as any problems they encountered and how they dealt with them. (See Appendix.) A significant other, when available, was asked several questions regarding use and benefit of the aid in order to verify responses and gain further insight.

RESULTS AND DISCUSSION

Client Contact with the Center

The primary purpose of the present study was to determine if periodic letters would lead to more frequent contacts from subjects regarding hearing aid problems so that they might be promptly resolved. Except for one subject who telephoned to report that she could not reach the center because transportation posed a problem, letters were virtually ignored. The only other responses to letters were several calls from clients with questions, following the initial reminder to make an appointment for a hearing aid evaluation. This letter, it may be recalled, was sent to *all* clients following the audiological evaluation.

Findings from Telephone Interview

All but two subjects (one in each group) were successfully contacted for interviewing. For another four subjects (two subjects in each group), relatives responded due to illness of the hearing-impaired individual.

Hearing aid status. As shown in Table 2, results revealed that most subjects purchased

Table 2
Number of Subjects Reporting Various Outcomes of Hearing Aid Prescription
During Follow-up Telephone Interview

	<i>E</i>	<i>C</i>
Purchased a hearing aid	15	13 ^a
Returned trial hearing aid	0	1
Returned for hearing aid check	11	8
Returned for post hearing aid check visit	0	0

Note. E = Experimental group ($n = 18$). C = Control group ($n = 17$).

^aOne subject was successfully fit with a relative's hearing aid.

and kept their hearing aids, whether or not they received letters. Previous investigations have yielded similar findings (Alberti et al., 1984; Owens et al., 1978). It appears, therefore, that once clients comply with the recommendation for a hearing aid evaluation, they are already prepared to own an aid. Of the subjects who purchased a hearing aid, 73% in the experimental group and 61% in the control group returned for a hearing aid check. The difference in percentages was not statistically significant ($z = .63, p > .05$) as determined by the Proportions test (Shearer, 1982). In addition, all subjects in the experimental group who did return came *before* the date that a letter was due to be sent out. It must be concluded, therefore, that the letters were not responsible for modifying subjects' behavior in this respect.

Hearing aid satisfaction and use. Satisfaction ratings obtained during the telephone interview were found not to be significantly different between groups when the Mann-Whitney U test (Siegel, 1956) was applied to the data ($U = 59.5, p > .05$, two-tailed test). From a choice of *excellent, good, satisfactory, somewhat helpful, or of little or no use*, the median rating was *satisfactory* in each group. Frequency of use also was not significantly different as determined by the Mann-Whitney U test ($U = 79.5, p > .05$, two-tailed test). The median use rating was *often* for both groups. Alternatives were *always* (at least 10 hours every day), *often* (at least five days per week), *sometimes* (at least 10 days per month), *rarely* (at least once per month), and *never* (less than once per month).

Significant others were consulted to verify answers and add insight whenever possible. Of the 33 clients who were interviewed, 22 had significant others, and were willing to permit them to be interviewed. When asked if they thought a hearing aid was needed, only two relatives answered "no." It is possible that these individuals harbored negative attitudes towards hearing aids but, in these two cases, the subjects' losses were mild and may not have significantly interfered with communication. One of these clients had decided against amplification, and the spouse's response provided support for the decision. Most significant others reported that the hearing aid was helpful (18 - yes, 2 - not sure, 1 - no), in agreement with the clients. Three clients judged their aids to be of little or no use, but two spouses contradicted this assessment (the third did not provide a significant other). Half (11) of the significant others reported that the clients did not wear their aids as often as they should (9 - yes, 2 - not sure, 11 - no). In two instances, subjects who reported constant use of their aids were contradicted by family members who complained that clients were resistant to wearing aids when requested to do so. These data

on two-thirds of the clients suggest that the frequency of use ratings reported above may be inflated.

Client action. Table 3 provides a summary of the reasons given for not contacting the center. Only five subjects reported no complaints. It may be seen that the answer most often given was difficulty reaching the center (e.g., walking, parking). Some subjects in the study reported by Owens et al. (1978) also referred to problems involved in transportation and parking. It may be recalled that the mean age of subjects in the present study was 73. Attempts have been made in the past to bring audiological rehabilitation services to geriatric clients; however, such programs have been sponsored and supported by university clinics (Harless & Rupp, 1972; McCartney, Maurer, & Sorenson, 1974), and may not be otherwise economically feasible.

Table 3
Reasons for Not Contacting Center

Reason Reported	No. of Subjects
Difficulty getting to center	7
Assumed problem could not be resolved	6
Thought dealer should fix problem	4
Too busy	2
Embarrassed to say aid didn't help	1
Dissatisfied with center	1

Note. Included in the table are data from subjects who owned hearing aids, could be reached for interviewing, and complained of hearing aid related problems.

The second most common reason given for not contacting the center was the assumption that the problem could not be resolved. In some cases, such as difficulty in noise, this assumption was justified. In cases such as feedback and earmold pain, subjects incorrectly assumed the problem to be a natural limitation of amplification and, therefore, untreatable. Perhaps, had the letter specified some of the more common resolvable problems, it might have had more impact.

Four clients contacted the hearing aid dealer instead of the center to take advantage of no service charge or because they felt that the dealer who received payment was responsible. The difficulty of client follow-up when one is a prescriber who does not dispense has been used to validate the establishment of hearing aid dispensing programs ("Dispensing Quality," 1987). Owens et al. (1978) invited a local hearing aid dealer to their clinic to sell aids, but without full responsibility for the delivery and servicing of the aid, opportunities for follow-up were still lost. Relatives revealed that some of the explanations given for not returning to the center may have been excuses, with the true reason being poor motivation (e.g., subjects coerced by families to purchase aids).

Lack of contact with the center was not due to a lack of problems with the hearing aids. Table 4 describes the types of complaints noted during the interview and how they were addressed. In most cases, subjects contacted the hearing aid dealer or did nothing. Occasionally, they resolved problems themselves or consulted a friend. Many problems remained unresolved eight months after the hearing aid evaluation.

Table 4
Hearing-Aid-Related Complaints and Attempts to Resolve Them

Complaint	Solution					
	Return to Dealer		Do Nothing		Self/Friend	
	R ^a	U ^b	R	U	R	U
Feedback	1	3		5		4 ^c
Difficulty in noise		2		6		1
Difficulty hearing		4		3		
Earmold discomfort		2		4		1
Inserting mold/aid	1	1		2		2
Changing battery	3					1
Adjusting volume			1	1		1
Hearing aid broken	3					
Itching		1	1	1		
Wax	1					1
Size of aid						2
Perspiration						1
Tinny quality						1
Aid falls off ear						1

^aR = resolved. ^bU = unresolved, at time of interview. ^cSolution was to lower volume which may have resulted in insufficient gain.

CONCLUSION

A critical role of audiologists is assisting in clients' process of adjustment to amplification. Results revealed that, after a hearing aid evaluation or check, the prescribing center was unable to have an impact on the adjustment process, despite the added effort of frequent letter contact. The letters were not needed to encourage subjects to buy and keep hearing aids, and they were not sufficient to influence subjects to contact the clinic regarding problems so that satisfaction could be increased. It is not known if letters would have been more effective had they specified the common types of problems resolvable by the clinic. Alternatively, it is possible that they might have had greater impact had they come from the dispenser of the aid. There is some evidence to suggest that financial considerations do play a role. The findings imply that facilities committed to the comprehensive aural rehabilitation of hearing-impaired clients must adopt more aggressive follow-up policies, which may include telephone contacts with clients and their families, and hearing aid dispensing programs. Further research is necessary to clarify these issues.

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APPENDIX

TELEPHONE INTERVIEW

The following is the script used in the telephone interview eight months after a hearing aid was prescribed.

I am calling from the Brooklyn College Speech and Hearing Center. We are looking for information which we hope will help us serve our clients better in the future. We have some questions we would like to ask you.

1. Did you purchase a hearing aid? If no, why not? Are you planning to get one in the future?
2. Do you still have it? If no, why not?
3. Do you wear it? If no, why not?
4. How often do you wear it?
5. Please rate your hearing aid's overall performance (excellent, good, satisfactory, somewhat helpful, of little or no use).

6. Have you had any of the following problems and do you still have them: changing battery, earmold insertion, earmold discomfort, adjusting volume, feedback, other?
7. Did you take any action to alleviate problems? What did you do? Why did you decide not to contact the center?
8. Is there someone close to you who could give us information on the hearing aid's performance?
Name _____ Relationship _____
 - a. Do you feel client needs a hearing aid?
 - b. Does the hearing aid appear to help him/her?
 - c. In your opinion, does he/she wear it as often as he/she should?