HEARING ACCESSIBILITY IN A HOME-FOR-THE-AGED

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Background: The majority of the institutionalized elderly have a clinically significant hearing loss. Even those with hearing thresholds within normal clinical limits often have sub-clinical declines in auditory processing such that, even though they have no trouble understanding speech in ideal listening conditions, they experience trouble understanding speech in the noisy conditions that are typical in everyday life (for a review see Willott, 1991). Nevertheless, few residents of homes-for-the-aged receive clinic-based audiologic services. Furthermore, even those elderly individuals who do receive clinic-based services often find that they continue to experience difficulty when trying to communicate in everyday situations (Health and Welfare Canada, 1988). Many of their activities of daily living are not 'hearing accessible' even after treatment.

Definition of Accessibility: An activity or facility is considered to be hearing accessible if hard of hearing individuals are able to function in the activity or facility as effectively as do people who have normal hearing.

Purpose of the Project: To achieve hearing accessibility for seniors in their activities of daily living at homes-for-the-aged, we believe that it is necessary to develop community-based (on-site) services as an alternative to the existing clinic-based audiologic services. Traditional clinic-based services focus on rehabilitating the hard of hearing person, most often by fitting them with a hearing aid. In contrast, the objective of a community-based accessibility approach is to develop solutions that could be implemented by hard of hearing seniors living in homes-for-the-age and/or by their regular communication partners (other residents, family, staff, volunteers), or by the management of the care facility. These solutions would extent beyond the typical provision of personal hearing aids and would include the application of appropriate assistive devices, administrative modification of programs and routines, and modifications of the physical and social environment. To demonstrate how such a program might operate, we designed, implemented and evaluated a hearing accessibility program at a model home-for-the-aged (Head and Jennings, 1994).

In the present paper we will describe the steps that were taken in developing an accessibility plan for the model home-for-the-aged, St. Joseph's Villa in Dundas Ontario. Examples of the solutions that were implemented and outcome measures of the degree to which the solutions were successful will be provided.

Assumptions and Objectives of the Project: The assumptions behind the design of the project were that most residents of homes-for-the-aged experience communication handicap and that communication handicap results in non-participation in desired activities or in communication performance that is below the potential of and/or unsatisfactory to the residents during participation in activities. The primary goals of our hearing accessibility program, therefore, were to increase the participation of residents in desired communication-demanding activities and to improve the effectiveness of communication during their participation in those activities.

Preliminary Survey: As the first step in developing the hearing accessibility program at St. Joseph's Villa, we needed to obtain a profile of the activities of daily living at the Villa that required hearing. In a pilot study, two meetings were held, each with 15 participants: 5 residents with known hearing loss, 5 residents who were considered to have good hearing, and 5 staff. The participants were asked, "In everyday life at the Villa, when is it important for a resident to hear?" Each person generated a situation and a list was compiled on a blackboard. The meeting continued until no further situations could be generated. The lists of situations generated were later reviewed by four experts (two audiologists, a speech-language pathologist who works with the elderly, and the nurse in charge of the clinic at the home-for-the-aged) who determined a final list of 33 key situations, excluding those that were considered to be duplicates or irrelevant to the project. The 33 situations were divided into categories: 17 primary situations in which a resident could initiate listening to speech communication and 16 supplementary situations in which a resident either listened to a non-speech signal (e.g. fire alarm) or could not chose whether or not to initiate speech communication (e.g. PA announcements). The 17 primary situations were the following: talking to familiar people, talking to hard-of-hearing people, telephone, chapel, meetings, exercise class, teas in the solarium, teas in the auditorium, teas in the tuck shop, dining in the main dining room, dining in floor-specific dining areas, TV, radio talk shows, taped books, taped music, movies at the Villa, and therapy.

Outcome Measurement Tool: The next step in the project was to determine the extent of participation by residents in each of the 33 situations and to determine whether or not they were satisfied with the effectiveness of their communication in the situations in which they participated. To obtain this information, we developed a questionnaire that would provide us with a profile of the scope and effectiveness of residents' communication. For each of the subset of 17 primary situations, the questionnaire asked a set of 10 questions that tapped the resident's interest and rate of participation in the situation, how much they understood and how satisfied they were with communication in the situation if they participated in it, and whether they employed and benefitted from technology or communication techniques when they were communicating in the situation.

Design of the Study: The questionnaire was administered twice at a six-month interval to provide us with baseline data about accessibility needs. An audiologist then implemented a service program that aimed to increase hearing accessibility at the Villa. The questionnaire was also administered six months and twelve months after the commencement of the service program. A comparison of the pre-program questionnaire results to the results obtained following the implementation of the service program were used to measure whether or not the service program had been effective in improving the scope and/or effectiveness of the residents' communication during primary communication situations.

Subjects: Thirty residents with relatively stable physical and mental health maintained their participation throughout the two years of the study. Subjects spoke English as a first language and had no communication disorders arising from causes other than hearing loss. At the beginning of the study, the mean age of the participants was 85 years (range 68 to 94 years). The length of residency in the home-for-the-aged ranged from 0 to 26 years, with over half having lived there at least 6 years before the beginning of the project. This is consistent with our impression that there was a well established community of residents at the Villa who knew each other well, thereby fostering motivation to communicate and to engage in activities that featured social interaction.

Pre-program audiometric tests were conducted to determine the extent of each participant's hearing loss. Using the rule of thumb that a person with a threshold loss of at least 40 dBHL at 2000 Hz is likely to benefit from wearing a hearing aid, we estimate that about half of the evaluated group had a degree of hearing loss that warranted a hearing aid fitting. The other half of the group demonstrated high-frequency hearing threshold loss consistent with aging (presbycusis) and even though the degree of their threshold loss was minimal, it is well known that such cases experience other auditory processing deficits that account for the frequent complaint of the elderly that they have difficulty understanding speech when there is background noise or multiple talkers (Willott, 1991). Even when there was no background noise, the best speech discrimination score obtained was fair (below 80%) for about 2/3 of the group. While hearing aids may correct for threshold loss, they do not overcome the latter type of auditory deficit that is characteristic of aging. In such cases where signal enhancement in noise is required, assistive listening technology may be more useful than hearing aids.

Pre-project Use of Technology: About half (16) of the evaluated group owned hearing aids at the outset of the project. Of those who had hearing aids, 15 used their hearing aid(s) at least some of the time, with most wearing their hearing aids all day long everyday. Prior to the beginning of the project, some public phones in the Villa were equipped with handset volume controls and four participants reported using them. No other public assistive listening devices were available. Nine participants used handset volume controls on private telephones. The only other assistive listening devices in use were jack-in earphones for television use that were owned but seldom used by two of the residents, and a one-to-one communicator that was owned but only tried once by one resident.

Questionnaire Results: In this paper, a selection of the results obtained during the baseline period will be reported to demonstrate how we appraised accessibility needs at the Villa. Specifically, the number of residents participating in the primary situations, the number of hours spent by residents in situations in which they participated, and the amount that they understood and the degree of their satisfaction with communication in the situations will be described.

One situation where there was a high rate of participation by residents but widespread trouble understanding speech was at the chapel. Therefore, the chapel situation will be used as an example of how the treatments were tailored to situation-specific requirements. Outcomes will be reported that indicate that the treatment was highly successful in improving the residents' communication function in the chapel situation.

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