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# REHABILITATIVE AUDIOLOGY AS RELATED TO REHABILITATION OF THE DEAF

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## INTRODUCTION

The world in which we live necessitates effective communication; there are few activities in which individuals can participate without the ability either to express themselves or to receive and understand what other persons in the environment say. In order to emphasize the above statement, we only need to think of the roles that are assumed by all individuals, regardless of whether or not they are deaf. There is the need to communicate with employers and employees, with spouses and children, with storekeepers and physicians, and with countless other types of individuals. The task of communication usually is taken for granted by those persons with normal hearing and speech. As a matter of fact, of course, most persons do have normal hearing and speech, and society is geared to the world of the normal communicator. We cannot evade the issue that the environment is primarily oral.

In many instances, however, this fact has been ignored by many of the approximately 300,000 persons who are characteristically classified as deaf. For many years, this population has been stereotyped as the group who use signs for language and who do not speak. These individuals mingle only with other deaf and tend to isolate themselves from the oral society. This group is compared to the "hard of hearing" population who generally communicate as normal hearing and whose loss often is acquired rather than congenital. The stereotype often extends to the statement that, in

comparison, the hard of hearing group has a normal command of speech and language whereas the deaf do not possess the proficient skills of communication, even with the utilization of signs. Some evidence cited to support the above statement is that the manual deaf are rarely, if ever, seen by an audiologist. For too long, there has been a subtle hostility between the deaf and the professional person involved in speech and hearing rehabilitation. This situation is a tragic one.

There is a need for compromise which can be effected through understanding by all concerned individuals. Various reasons exist for the present situation. Probably one of the major factors has been the fact that most audiologists have been trained to work with the hard of hearing. They received little, if any, exposure to the problems which may be unique to the deaf. Their instructors made no overtures to learn manual language and, in fact, wanted nothing to do with the manual deaf. This attitude was conveyed to succeeding generations of audiologists. The general feeling was that we could be of no professional assistance to the deaf; since they communicated manually, why consider lipreading, auditory training, and speech therapy? This outlook fits into the pattern of stereotyping the deaf. On the other side, the deaf felt that the professional person in communication therapy didn't appreciate their problems even when evidence showed that many deaf youngsters who had gone through oral programs were still unintelligible and couldn't communicate after nine years of instruction. The deaf also couldn't understand why the audiologist wouldn't learn manualism so that there could be communication which would at least effect an understanding of the problems and needs which existed. As a consequence, a situation has existed for years which benefitted neither the hearing clinician nor the deaf. We, therefore, talk about this need for a compromise and a need for understanding. Progress will come but you should know that there are many who represent both the old views of the deaf and clinician who will resist.

There, however, has been some progress by virtue of the numerous conferences that have been held during the past ten years. A positive aspect of these conferences has been the freedom to point out some of the existing problems with respect to communication. A

negative aspect, however, has been the fact that the same people have been talking to each other these past few years. In large part, these are the people who are willing to cooperate; these people are not the ones who need to be convinced. It may well be that we have not reached the appropriate persons in our attempts to establish rehabilitation programs for the deaf. One needs only to look at the organizations for the deaf and the composition of their membership to realize that we are not reaching sufficient numbers and types of persons. From the aspect of audiology, how many audiologists belong to the Professional Rehabilitation Workers with the Adult Deaf, the National Association of the Deaf, and the Council of Organizations serving the Deaf? Only a small fraction of the number of audiologists in the United States is the answer. This writer is convinced that there should be many more audiologists in these organizations. Before they can be convinced to join there must be an understanding by them of the potential contributions that they can make in deaf rehabilitation. The audiologist must realize that most deaf want to communicate in this oral world; that is that many deaf do speak and may be in need of therapy to improve speech intelligibility and that many deaf either do lipread, want to improve their lipreading ability, or wish to learn how to lipread. For most deaf adults whose primary mode of communication is manualism, the prognosis for learning how to speak or to lipread is poor. The time to begin to learn a mode of communication is with the preschooler. The implication is not that all deaf are going to be trained to be oral, but that we need to develop means of communication whether the means be oral, manual or some combination of the two. Unfortunately, we are not able to predict in those pre-school years which communication route is the best for a youngster. It would seem feasible, however, to give each child the benefit of the doubt and utilize instruction that combines both oralism and manualism, at least for those with very severe hearing losses. This type of instruction can be done, and, as you know, is being done in some facilities. The problem is finding competent instructors who are not biased either orally or manually. It takes an excellent, eclectic instructor to do the job. How many of them do you know?

The point is that this is an oral society and most deaf can fit into it either partially or totally. There is a place for audiology in deaf rehabilitation if we are willing to try. If we can get the audiologist to

understand the deaf and if we can get the deaf to understand what audiology is about, the starting point can be found. As an audiologist interested in rehabilitation, this writer can tell you, in his opinion, what the field is about. It will then be your turn to either accept or reject what is said. It will be my job to try and convince other audiologists that we can be of assistance in deaf rehabilitation. It will be both our jobs then to stop making a dichotomy between the deaf and hard of hearing. Many times we say we don't make this distinction but in reality we do. Why not talk about the hearing impaired and place the communication problems on a continuum of difficulty? Percentage of hearing loss is not the index of communication difficulty or success, communication function is the criterion. We must not forget this fact.

### THE AUDIOLOGIST

The clinical audiologist has been pondering his role for the past several years. Clinical audiology assumed considerable significance during and after World War II because of the many veterans who acquired service-connected hearing loss. Audiologists were quite concerned with not only diagnostic evaluation, but with aural rehabilitation procedures including counseling, lipreading, auditory training, and speech therapy. The field of audiology was concerned with the total rehabilitative aspects of the individual which applied to all cases of hearing impairment. Many university speech and hearing clinics had contracts to provide rehabilitative services to veterans with considerable emphasis on hearing aid selection and fit. Then a process of change occurred and the Veterans Administration established its own hearing programs for veterans, phasing out its university contracts. Many otologists began hiring their own audiologists; numerous community and hospital speech and hearing programs emerged.

There was much less focus on the university clinic as the only service organization providing services in rehabilitative audiology. Another important trend saw numerous clinical audiologists in university settings turning to either research or diagnostic concentrations in audiology. There was far less concern for aural rehabilitation and historically, we now find the clinical audiologist searching for his primary responsibility. Needless to say, we have

one group who wishes to confine its efforts to diagnostic audiology, another group (but much smaller in number) who desire to concentrate on rehabilitative audiology, and a third middle of the road group who believes that the future of clinical audiology will be with those persons who believe in both diagnostics and rehabilitation. This middle of the road group has gained impetus during the past few years with the advent of the Academy of Rehabilitative Audiology. Most of these individuals feel strongly that the clinical audiologist must engage in rehabilitation because it is part of his professional responsibility. Although not every audiologist feels this way, it appears that many feel lipreading, auditory training, speech therapy, and counseling are properly within their domain. With regard to the hearing impaired adult, there is probably little question that these aspects of rehabilitative audiology are within the proper area of the clinical audiologist. The instructor of lipreading and auditory training must be professionally trained in the psychology of the aurally handicapped, the dynamics of human behavior, the functioning of the hearing mechanism, and the theoretical and practical aspects of rehabilitative audiology.

### *REHABILITATIVE AUDIOLOGY*

Rehabilitative audiology represents rather broad terminology. For purposes of this presentation, in terms of informing you what the audiologist has to offer, rehabilitation refers to hearing aid evaluation, lipreading instruction, auditory training, speech and language therapy, and counseling. A deaf individual may benefit from any one or all of these procedures. Rehabilitative audiology pertains to those factors which may improve communication after medical and or surgical treatment. In essence, this means that the audiologist has the medical clearance to proceed with evaluation and therapy.

Although hearing aids may not be of use to many deaf individuals, it is important to consider amplification in terms of the benefit which may be received. It is well known that hearing aids can provide sufficient amplification for a majority of hearing loss cases. It also is known, however, that compensation for hearing loss involves more than making speech and sounds louder. In many cases of sensory neural hearing loss, for example, the hearing aid user may state, "I hear you but I don't understand all of the words."

This is the kind of case that presents discrimination difficulties for understanding speech clearly. This problem illustrates that the abnormally functioning auditory system doesn't always respond to amplification in such a manner that speech becomes "naturally clear" again with a hearing aid. As most of us would agree, hearing aids are not the same as "new ears." Essentially, what can happen in some cases of sensory neural hearing loss is that there is sufficient amplification benefits but limited discrimination improvement. In cases of profound hearing loss, a hearing aid only allows the user to know that there is a world of sound even though there is little or no understanding of speech and environmental sounds per se. A number of profoundly deaf persons utilize hearing aids in order to be aware of environmental sounds; for some, lipreading appears to be enhanced with amplification.

The objective of rehabilitative audiology is to improve the person's communication ability to the maximum extent possible and to assist him in fulfilling his various roles in society. The fitting of a hearing aid alone does not necessarily constitute auditory rehabilitation. Lipreading is not a "cure all" therapy, auditory training is limited in the benefit it may provide and speech therapy is only one aspect of the problem. Counseling alone doesn't solve all of the individual's problems. The emphasis is that any of the procedures mentioned may be of limited benefit when utilized individually. When used in a more total effort, these procedures, as needed or as are appropriate, can be invaluable in contributing to the successful wearing of a hearing aid and to overall communication function. It is this approach that can lend itself to rehabilitation and indicates we are doing everything we can for the hearing impaired adult. What may be important is that the person is being given the benefit of the doubt. We also need to remember that there are not only varying degrees of success but individuals who cannot be helped. We do have a responsibility to inform clients about all appropriate rehabilitation possibilities and how they may be of assistance. In many instances, intensive counseling is necessary because some adults do not want lipreading instruction, auditory training, or speech therapy. It is hoped that the need to consider comprehensive auditory rehabilitation for many hearing impaired adults is apparent. It then becomes necessary to consider rehabilitation in terms of individual needs. There are general considerations and approaches to therapy, but in the final analysis

each client presents us with an individual problem. Some of the major factors to consider in planning rehabilitation include age, age at onset of hearing impairment, severity of hearing impairment, type of loss, duration of hearing loss, status of speech and language, and occupation. The various kinds of rehabilitative procedures will now be presented in terms of some of the factors indicated.

Lipreading is probably one of the oldest and most frequently recommended kinds of therapy for the compensation of hearing loss. Formal lipreading implies more than the ability to understand speech by reading another person's lips. It also refers to the ability both to be a good listener and an observant individual. It would seem that any person, in order to receive and to understand a communication, must be set to receive the message. There are many persons who have normal hearing who miss conversation because they are not listening; that is they are not paying attention. If the hearing impaired person is not a good listener, the communication breakdown may be even greater than would be anticipated by the hearing loss alone. In formal lipreading training, considerable emphasis is given to improving listening ability.

Being a good listener also implies awareness of gestures and facial expressions. A simple gesture may indicate a motion to move toward the speaker, another gesture may indicate rejection. The facial expression of the speaker may indicate the emotions of happiness or sadness, etc. All of this information may be the lipreader's without the speaker uttering a single word.

The environment in which the lipreader finds himself also may offer clues as to what a conversation is about. The housewife at the grocery store may be talking about a certain kind of detergent or the man at a sporting good's store talking about fishing rods. These situational clues can help the hearing impaired person to get the "gist" of the conversation.

The ability to read lips is the essence of this aspect of rehabilitative audiology. It can be quite helpful in providing clues to various sounds and words when these particular sounds and words are not heard. Lipreading does have its limitations since most sounds are not visible on the lips. A person may be able to learn how the (p), (b), and (m) sounds are recognized since they are quite



visible as lip sounds. He may also learn how to recognize certain other consonants as well as some vowels. The situation, however, is not that simple for many sounds such as (k), (g), (t), and (l). There are some persons who may not benefit from lipreading instruction. The utilization of lipreading, however, has helped many hearing impaired individuals to communicate more effectively. From an experimental point of view, in terms of predicting lipreading success, we do encounter some frustrations because a number of studies have indicated that there appears to be no correlation between lipreading ability and severity of loss, lipreading ability and intelligence, and lipreading ability and duration of hearing loss. Since, in the therapy setting, it seems that many individuals can profit from lipreading instruction, it should be considered in the remediation process. For the profoundly deaf, excluding those who use manualism, lipreading is the primary means for understanding the conversation of others. For the person likely to have progressive hearing loss, lipreading instruction is imperative in terms of preparing for the future. It should be emphasized, too, that for the congenitally hearing impaired child, lipreading should be part of the training process in helping the child learn language.

The second type of rehabilitation procedure is auditory training. Auditory training can be considered from two different approaches depending on the nature of the problem. The first aspect is concerned with the congenitally deaf or hard of hearing child who has not yet acquired a command of the language. This problem is quite different than that faced by the individual who has language but now has a communication breakdown due to an acquired hearing loss. Considering the first aspect of auditory training, it seems feasible that the child without language will need to learn it. Amplification offers the possibility of providing the compensating means by which this can take place. With the congenitally hearing impaired child we must start at the beginning, i.e., we must start with the same kinds of language experiences as the normally hearing child. This specialized training, most often given in pre-school programs, attempts to first make the child aware that his world consists of different kinds of noises and sounds. Generally, training leads to the development of speech and language. As previously mentioned, the ability to predict how successful the child will become orally is not possible if the impairment is profound. It is at this point where the advocates of

oralism and manualism need to reconcile their differences and attempt to work together in planning the child's welfare. We have seen the successes and failures of both approaches to communication so it is obvious that conclusive statements cannot be made about either approach. This writer is not sure how the problem will be resolved but if the interests of our future hearing impaired citizens are kept foremost in our minds, perhaps we can work together, rather, we must work together.

In considering the second aspect of auditory training, our attention may be focused on discrimination difficulties and other adjustment problems to amplification for the person who has acquired language prior to hearing loss. Auditory training may help these individuals better adjust to hearing aids. Many first-time hearing aid users, for example, are disappointed because the hearing aid does not provide perfectly "natural" speech. In the case of the severe or profound hearing loss, the person may not have any idea as to what to expect with amplification. Without prior counseling about limitations, the client may overlook the advantages which might be possible with an aid, even if it is only an exposure to the world of sound if the loss is profound. In some cases, it is important to consider auditory training prior to hearing aid selection. In other situations, auditory training may be received immediately after the hearing aid is procured. Emphasis is on learning how to utilize amplification as effectively as possible. Amplification for the profoundly hearing impaired may help in terms of personal safety as well as assist in the improvement of voice quality and modulation. These benefits may be obtained by some persons even though understanding speech is not one of the benefits. Auditory training also would seem feasible for these individuals in order to determine if they can adjust to amplification and accept only limited benefit. It must be reiterated that auditory training is not the entire solution in remediation but it is one means by which some hearing impaired adults and children can receive benefit in improving their overall communication function.

Speech therapy is our next area of discussion. The need for this kind of therapy may be overlooked because the rationale for it is not realized. As we know that speech and language are learned, we should also be aware of the fact that individuals monitor their own voices as they speak. This built-in monitoring system is the device

that helps us to regulate the intensity of our voice so that it is neither too loud nor too soft. Monitoring also is one of the means by which we detect errors, "a slip of the tongue" as we speak. We may then correct the error by repeating the sound, word, or sentence. The person with a serious hearing impairment may have difficulty with his monitoring system. Eventually, this person may begin to distort certain sounds since he is not able to monitor his voice as does the normally hearing person. In addition to hearing loss per se, there is now the added possibility of defective speech. The more severe the loss, and the longer the loss has existed, the greater is the possibility that the person will lose the pattern of sounds no longer heard normally. Speech therapy is crucial for the person who has not acquired speech and language because of a congenital hearing impairment, or an acquired loss in infancy. The problem in this kind of case is more serious since we are attempting to teach speech to those who have never heard it normally. The difficulties encountered, of course, depend on the severity of the hearing loss. For those with severe and profound losses, the therapy task is greater and more intensive. In many of these cases, there is progress in speech development, but the speech of these persons is not always intelligible. For some profoundly deaf, oral communication may never develop. Early training is a necessity if there is going to be an opportunity for success. Once again, the problem of approaches and methodologies is before us. The decision we make will most definitely affect the future welfare of any case in question. The utilization of amplification, auditory training and lipreading, as well as some possible manual supplement, may enhance our efforts in the remediation process.

The psychological problems, manifested by poor adjustment to hearing impairment, cannot be excluded from our discussion. As a matter of fact, we spend more time counseling some persons than we do evaluating them. For these individuals, counseling is an integral part of the remediation process. The complexity of the problems range from rather simple ones to major crises. Specific problems include, for example, the husband who doesn't want to wear a hearing aid; the severely hard of hearing teenager who wants to wear a behind-the-ear instrument rather than a body type aid; the young elementary school child who refuses to wear a hearing aid because he feels he will be considered different from the other children in the classroom, the aged person who says that the

difficulty is not due to his hearing but to other people speaking too softly; and the manually deaf young adult who wants to learn speech because his girl friend has normal hearing. It becomes evident that the clients we see present more to us than just persons with hearing losses or candidates for hearing aids. These clients present themselves to us for service and assistance. During our contact with them, their problems become our concern and if the scope of these problems is beyond the responsibility of the audiologist, other referral possibilities should be considered. Certainly if an audiologist is to communicate with a manually deaf person, then this professional person ought to know manual communication; otherwise he will be of little help in rehabilitation.

Human beings are complex individuals with certain needs, desires and interests. We should be alert to the complexities of each individual as we consider the kinds of rehabilitation he needs. This realization will enable us to do the best job for the hearing impaired so he may function as normally as possible in society.

During this brief period of time, a cursory overview of rehabilitative audiology has been presented. It is a package of methods which can be used in total or in part. This package can be modified to fit the needs of any given individual. It has the potential for assisting both the oral and manual hearing impaired. It is not perfect but then when we consider that we are using it with human beings, we know that there will be both successes and failures.