Current Canadian Clinical Concepts

The University of Montana Communicative Rehabilitation Program for nursing-home residents is based, in part, upon the Goldstein and Stephens Model (1981), more recently expounded by Smaldino and Traynor (1982). At this time, only the preparatory phases of the Program have been implemented. This research has documented the high incidence of auditory disorders in nursing-home residents who are not being provided with adequate hearing-health care, thus supporting the need for intervention.

The patient's communicative behaviors are screened by two independent observers for a period of about one week. On the basis of these observations, the seriousness of communicative deficiencies are rank-ordered, and these target deficiencies are prioritized for detailed evaluation. Detailed evaluations allow for the implementation of individualized communicative rehabilitation programs with specific goals.

Each individual's Program is divided into time blocks (each with an equal number of observations) based upon the length of time deemed reasonable to achieve therapeutic goals, as follows: 1. Data collection on the target communicative deficiency - this documentation serves as baseline data against which changes in behavior may be gauged. 2. Intervention. 3. Data collection as in block 1. The same measurement tools are used across the three time blocks. Thus, at the conclusion of the third time block, it is possible to document changes in behavior attributable to intervention, and also the need for continued intervention. Periodic checks (approximately bi-monthly) are undertaken to ascertain continued usage of learned skills. Rapid and complete patient turnover, thus far, have frustrated efforts to gather longitudinal data.

Comments, as well as suggested and contributed articles, can be sent to the Co-ordinator:

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The University of Montana Communicative Rehabilitation for Nursing-Home Residents

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PROGRAM JUSTIFICATION

The provision of rehabilitative services to nursing-home residents in Western Montana has been undertaken recently by the Department. Interest in the Program was initiated in 1980, and verified in 1981, when students, as part of a class project for Adult Aural Rehabilitation, documented a very high incidence of hearing dysfunction in this population.

Over a two-year period, this documentation has provided the following data: Audiological manifestations of nursing-home residents were evaluated by otoscopic inspection, pure-tone audiometry, tympanometry, static acoustic immittance, acoustic-reflex screening and the operational status of hearing aids. In addition, the verified incidence of ear-canal collapse was investigated. The studies (Bingea, et al., 1981;

Scott et al., 1982) included 210 (377 ears) subjects (140 females; 70 males) who underwent complete testing. The age range of the subjects was 45-98 years. Results of audiological evaluations indicated a 97.3% (100% the second year) incidence of hearing loss, 57.4% abnormal otoscopic findings, 14.3% abnormal tympanometric findings, 7.3% (of 55 ears) verified ear-canal collapse, 0% abnormal auditory adaptation of loudness (35 dB or more), and 11.6% abnormal acoustic-immittance. Twenty-five subjects reportedly owned hearing aids, but only 22 aids were made available for evaluation. Listening checks showed 19 of these to be inoperable which was verified electroacoustically. On the basis of these findings, medical and audiological recommendations for follow-up were made. While two nursing homes were in common across the two studies, only one patient was found to be in common. This extreme rate of turnover in the period of one year indicates the need for rapid and efficient intervention. The paucity of data in the published literature prevents the a-priori establishment of an efficient Program. Therefore, the Program's cost-effectiveness and accountability were developed by careful consideration of experimental design.

Because of the logistical nature of many of the deficiencies observed in the preliminary studies (Bingea, et al., 1981; Scott, et al., 1982), periodic in-services for nursing-home staff and associated personnel are provided. These in-services include gross anatomy of the auditory system, nature of normal hearing, communicative effects of hearing impairment, and care and maintenance of hearing aids. Analysis of the effects of these in-services is not yet complete. However, it was felt that the data collected could be used to support the need for intervention.

PROGRAM COMPONENTS

The rehabilitation model proposed by Goldstein and Stephens (1981) provided the basis for the structure of the Program. The structure of the Program serves two functions: 1. It defines a framework whereby adequate intervention may be provided to the indigent population. 2. It provides training opportunities for students in the Department. The Program is composed of two overlapping components: 1. Evaluation and assessment. 2. Remediation and documentation.

The underlying philosophy of the Program is based upon the premise that in order to institute appropriate rehabilitative intervention, it is necessary to define as explicitly as possible the nature and extent of the communicative dysfunctions. To that end, careful case histories are obtained, and patients and/or relatives, are asked to complete questionnaires that provide scales used to rate communicative function. These scales also are used to obtain information about psychological, sociological, and environmental variables related to communicative function. These preliminary data in conjunction with observation of the patient under various communicative situations provide information which allows for a determination of the seriousness of any communicative disability, and also allows for determining which of several deficiencies may be most important to the patient. Experience with this population suggests that it is seldom possible to obtain all the information desired. Thus, it has been possible to administer puretone audiometry to only slightly more than half of the residents. For many, there was a handicapping condition which precluded the use of behavioural measurements. In other cases, the staff of the nursing homes simply felt that it was inappropriate to "disturb" the patient. Therefore, one of the ongoing priorities still is the education of staff and administrators of nursing homes. In order to optimize participation of nursing homes in this Program, and to provide students with some

training opportunities, these services are implemented free of charge.

The evaluation component of the Program, while still undergoing modifications for this population, includes auditory (as much of a complete site-of-lesion battery and amplification-options evaluations as can be administered), visual screening, assessment of visual-spatial processing, learning and memory, evaluation of language (vocabulary, syntax and phonology) and manual dexterity. Current informal observations indicate that the residents use longer sentences, with slower rate and disturbed articulation and rhythm. There also is a tendency for the patients not to initiate discourse and to react passively to dialogue. These data have not been analyzed systematically yet, and there appears to be considerable variability across patients, as well as within patients across time.

Because this Program may be considered in its infancy stage, there has been no data as yet regarding the effectiveness of various therapeutic approaches. Currently the procedure is based upon a time-series design in which therapy is instituted for each patient individually, and in which the patient serves as his/her own control. A modicum of control over happenstance changes in a patient's behavior (not related to therapy) is obtained by virtue of the fact that there is an equal probability that this change will occur in any of the three time blocks involved (this is the direct result of the fact that the three time blocks subtend an equal number of observations and last the same amount of time). No change in behavior is viewed as the result of intervention unless that rate of change is greater during the therapy block than it is in either of the other two (with allowances made for ceiling effects). The design lends itself to many analysis techniques such as patterns analyses, and regression. It is hoped that the usage of methodical experimental design, while apparently tedious at first, will allow the development of a sound data base upon which more cost-effective and accountable approaches for the delivery of communicative rehabilitation services to this growing and neglected population may be based.

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