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Sylvia M. Hall

*Sylvia Hall is Coordinator of Deaf Services at the Fairview, Oregon Hospital and Training Center*

Larry Talkington

*Dr. Larry Talkington is Superintendent of the Center*

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## **EVALUATION OF A COORDINATED PROGRAMMING EFFORT FOR DEAF RETARDED**

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**SYLVIA M. HALL and LARRY TALKINGTON, Ph.D.**

Only a token number of reports have been presented on efforts to program for deaf mentally retarded (DMR) individuals. Among those few reported have been surveys of services available for DMR in facilities for retarded (Mitra, 1970), progress report on a project for DMR adolescents (James, 1967), outline of provisions for DMR in residential facilities for the deaf (Anderson & Stevens, 1969), effects of a day program for deaf retarded using manual sign communication (Hall & Talkington, 1970) and program descriptions of an integrated classroom, training and residential program for DMR (Hall, 1970). The accumulation of data, however, has been noticeably absent regarding behavioral change accruing from program efforts, performance with respect to controls or in terms of correlates to communication programming (Lloyd, 1970).

It is the purpose of this paper to report the results of a 12-month continuous training effort for a deaf retarded sample, focusing specifically on changes observed on various functional and social skill areas. Additionally, an evaluation of manual communication training was treated via a matched control design.

### **METHOD**

#### **Subjects**

Subjects for the study consisted of 36 male residents of a public facility for mentally retarded with 18 identified as severely hearing impaired (loss of 60 dB or greater in better ear—ISO), and 18 normal hearing controls

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*Sylvia Hall is Coordinator of Deaf Services at the Fairview, Oregon Hospital and Training Center; Larry Talkington is Superintendent of the Center.*

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matched on variables of age, ability level and length of institutionalization. Table I presents matching data for the subject groups.

**TABLE I  
CHARACTERISTICS ON MATCHING VARIABLES**

<u>Variables</u>	<u>DMR</u>		<u>Non-DMR</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Age	14.1	2.1	14.5	1.5
IQ	62.7	5.7	64.6	6.1
Length of stay (months)	74.4	14.2	70.8	12.6

**Procedure**

Representing essentially an intervention technique, the DMR Ss were moved from the residential setting where they had been living with normal hearing retarded peers to a residential cottage designed particularly for their hearing impaired condition with such provisions as warning lights, extra amplification, visual aids and a ward staff trained in manual communication methods. A coordinated classroom, pre-vocational, recreation and home living program was then instituted.

The program progressed through four definable phases of development. *Phase I* consisted of training cottage personnel in the language of signs, behavior modification techniques and basic information about problems and methods for programming hearing handicapped individuals. *Phase II* focused on the development of basic communication skills for the 18 DMR participants. Subjects were instructed in sign vocabulary through the use of manual communication classes, presented with various visual aids such as transparencies, video tape and modeling demonstrations. Both classroom and ward staff utilized the same vocabulary sequence so as to effect a standard approach to communication training. Additionally, concept training was implemented dealing with basic differences, likenesses, polars, et cetera. *Phase III* pursued functional academic training in the classroom, combined with pre-vocational training in cooking, laundry, clothing care, grooming and an on-grounds job, each of which was coordinated with the dormitory staff for additional emphasis. Ss were given the responsibility for getting to work on time, meeting schedules and assuming leadership roles at weekly social functions. *Phase IV* stressed vocational aspects and training of skills necessary for community return. Time, menus, budgets, purchasing and communication through printing or pictures at a community level were curriculum areas emphasized. Outings and field trips were frequently

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scheduled and social/recreational functions were conducted in the nearby community setting whenever possible.

Two forms of measurements were obtained on a pre- and post-project basis. Assimilation of manual sign vocabulary was assessed using a technique described earlier (Hall & Talkington, 1970) wherein transparencies showing common objects were presented to each subject for his manual sign response to the series of items and a score determined from the number of correct responses.

Secondly, a measure was obtained using a behavior profile devised by one of the authors (Talkington, 1969) wherein 14 functional skill areas were scaled on a dependent-independent continuum. Pre- and post-project measures were obtained for both the E & C groups and analysis performed using the difference between entering and outcome functioning scores as the dependent variable.

## RESULTS AND DISCUSSION

The results of the sign vocabulary assessment for groups indicated that the DMR Ss increased the average number of signs in their repertoire by  $M = 101.6$  ( $SD = 23.4$ ) over the 12-month project period. Their normal hearing counterparts experienced a negligible gain of  $M = 2.4$  ( $SD = 4.2$ ). A Fisher  $t$  comparison of the means indicated the DMR improved significantly over the controls ( $t = 9.1$ ,  $df = 34$ ,  $p = <.001$ ).

The results of an analysis of the change scores of the two groups on the 14 behavioral items is presented in Table II.

**TABLE II**  
Comparison of Groups on Behavior Change Scores

Variables	DMR		Non-DMR		t
	M	SD	M	SD	
Feeding	2.2	1.4	1.1	1.4	1.4
Dressing	2.1	1.3	1.6	1.5	.8
Toileting	1.4	1.6	.8	1.1	1.2
Grooming	3.0	1.5	1.0	.9	8.6**
Communication	3.9	1.2	.4	.5	13.4**
Concepts	3.0	1.8	.7	.8	4.6*
Academic	2.6	1.0	1.2	1.6	6.7**
Vocational	2.2	2.1	1.8	1.9	1.3
Recreation	3.4	1.7	1.2	.8	9.8**
Responsibility	3.2	2.3	.9	.6	8.4**
Social	4.4	1.8	1.3	.7	10.1**
Ambulation	.5	.7	.8	.4	.7
Sensory	2.5	2.2	2.1	1.8	1.2
Manipulation	2.4	2.1	1.8	1.7	1.4

\* $p = <.01$     \*\* $p = <.001$

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As indicated in the above table significant changes were observed in the DMR group on variables of Grooming, Communication, Concepts, Academic, Recreation, Responsibility and Social.

While progressive changes were observed in both groups on the other 7 variates, the gains were not of sufficient magnitude as to differentiate between groups. While undoubtedly deriving some benefits from a Hawthorne effect due to the special training focus, and while the controls were not exposed to a similarly organized program plan, both were housed in comparatively small residential environments when viewed against other of the institution's residential units.

The results of the present study offer support to earlier findings (Talkington & Hall, 1970) that DMR individuals can comprehend and utilize manual sign communication. The effects of a coordinated training effort in which communication, education, and residential staff complemented and reinforced each others' programs plus the extended evaluation period involved in the present study might well account for the considerably greater scope of vocabulary development noted herein as contrasted to the earlier data (Talkington & Hall, 1970).

The present results are little different than those reported for program effects upon other *retarded* groups. The uniqueness of the present study lies with the particular multiple-handicap treated and the fact of a matched sample design which allowed direct comparison on functional skills which a majority of studies have failed to assess. The fact that program efforts were beneficial with the DMR group will not be surprising to those few who have extended program coverage to such a target population, the degree of the success, however, may encourage similar efforts in the variety of settings where DMRs reside in an unprogrammed status (Mitra, 1970). An area which needs further study is that of long term behavioral effects of such programs in that problem behaviors have been cited (Hall, 1970) as a major reason DMRs are precluded from participation in on-going classes or formal school programs. Overall, the positive effects of coordinated programming for DMRs seem well supported by rudimentary assessment data on behavioral change and portend expanded program implementation and evaluation efforts.

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