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UTILIZATION OF THE DATA BANK OF THE ANNUAL SURVEY OF HEARING IMPAIRED CHILDREN AND YOUTH FOR REHABILITATION

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In our presentation this morning we want to describe to you the types of data which are available from the Annual Survey of Hearing Impaired Children at the Office of Demographic Studies, Gallaudet College, Washington, D.C., in terms of the possible usefulness of such data for program planning for rehabilitation services. We will present two series of data, first involving a look at the characteristics of students at different age levels to get an idea of how younger deaf children differ from those who are currently of "rehabilitation age," and second, a look at data we have recently collected on students who leave educational programs for the deaf, concentrating on those who are 16 years old or older. But first, a word about the Annual Survey and the Office of Demographic Studies.

The Annual Survey was formally established on May 1, 1968 for the purpose of collecting, processing, analyzing, and disseminating national level data regarding deaf and hard of hearing students. This national project was preceded by a two year pilot study, in which the feasibility of this type of operation was tested on a small scale in the Mid-Atlantic states, with positive results. The Survey was initially funded by the Bureau of Education for the Handicapped, and is presently funded jointly by Gallaudet College and the National Institute of Education. The data bank presently includes approximately 44,000 students of the estimated national population of 56,000 hearing impaired students receiving special educational services as a result of their hearing impairment. Information is collected regularly on basic demographic characteristics of the students, including age, sex, cause of hearing loss, additional handicapping conditions, ethnic background, type of educational program, and degree of hearing loss. This is supplemented by special studies which concentrate on these or other specific variables in greater detail for a limited time. The Office has also engaged in extensive work in the area of achievement testing of hearing impaired students, and has collected data relating to the I.Q. test scores of these students. The results of these data collections and analyses are published by the Office in its series of statistical reports, which are available upon request. The data bank is also available to outside researchers for their work, within the strict limits of confidentiality established and maintained by the Office.

Now let us look at the first series of data, based on the 43,946 students in our Survey for the 1972-73 school year. Table 1 shows the number of students at each age, and allows us to see easily the two "rubella bulges" in the population, at the 7 and 8 year old level, and at the 13 and 14 year old level in the table. One of the first implications for rehabilitation practice is that as these two age groups reach rehabilitation age an increase in the number of persons needing services will occur.

UTILIZATION OF DATA FOR REHABILITATION

Table 1
Number and Percent of Hearing Impaired Students Enrolled in Special Educational Programs Supplying Data to the Annual Survey of Hearing Impaired Children and Youth, According to Age, United States: 1972-73 School Year

AGE		NUMBER		PERCENT	
1		138		0.3	
2		443		1.0	
3		1018		2.3	
4		1394		3.2	
5		1828		4.2	
	1-5		4821		10.97
6		2341		5.3	
7		4043		9.2	
8		6329		14.0	
9		2589		5.9	
10		2411		5.5	
	6-10		17713		40.31
11		2471		5.6	
12		2678		6.1	
13		3098		7.0	
14		3504		8.0	
15		2413		5.5	
	11-15		14164		32.23
16		2222		5.1	
17		1928		4.4	
18		1502		3.4	
19		851		1.9	
20		310		0.7	
21		63		0.1	
22+		41		0.1	
	16+		6917		15.74
Blank/Unknown		331		0.8	0.75

Table 2
Percent of Hearing Impaired Students with Onset of Hearing Loss at Specified Ages, By Age Group, United States: 1972-73 School Year

AGE AT ONSET /	AGE	1-5	6-10	11-15	16+
Birth		61.0	66.7	62.4	64.1
0 → 2 yrs		16.9	14.6	16.6	17.1
3 → 6 yrs		1.6	4.8	6.3	6.3
7 yrs +		0.0	0.3	1.7	1.9
Blank/Unknown		20.5	13.6	12.9	10.6

UTILIZATION OF DATA FOR REHABILITATION

This involves about 30% more than the usual number for the older group (who are now aged 14 and 15) and about 100% more than the usual number for the younger group (who are now aged 8 and 9). For ease of presentation these age groups have been combined into four large age categories for the rest of the tables: birth to 5 years, 6 to 10 years, 11 to 15 years, and 16 years old and older. Table 2 shows that roughly two-thirds of the students in each age category are deaf from birth; there appears to be little change across the years here. Table 3 shows the distribution of degrees of hearing loss, suggesting that the younger children, as a group, are somewhat less deaf than the older ones. This table, however, also illustrates some of the many pitfalls in trying to establish trend data. For one thing, notice that the percent of unknown or unreported data is higher for the younger students; remember also that this refers to students in special educational programs. As those with lesser amounts of hearing loss grow up, some of them are integrated into regular schools, so that those who remain in special programs tend to be those with greater losses. This issue of the transfer of students among the various types of special educational programs, and between special programs and integration into regular schools greatly affects all the data presented here, but in ways which are not yet well known and which cannot therefore be adequately specified. Table 4 shows the distribution of the different ethnic groups by age category. Does the lower percentage of black and Spanish-American students

Table 3

**Percent of Hearing Impaired Students with Specified Amounts of Hearing Loss
(Better Ear Average), By Age Group, United States: 1972-73 School Year**

BETTER EAR AVERAGE /	AGE	1-5	6-10	11-15	16+
0-26 dB		0.9	2.7	3.2	2.3
27-40 dB		1.4	3.2	3.7	2.5
41-55 dB		4.1	6.0	6.8	4.8
56-70 dB		8.4	10.2	11.6	10.3
71-90 dB		15.6	20.7	21.9	23.7
91+ dB		24.2	35.3	37.5	41.2
Unknown/Not Reported		45.3	21.9	15.2	15.2

Table 4

**Percent of Hearing Impaired Students with Specified Ethnic Backgrounds,
By Age Group, United States: 1972-73 School Year**

ETHNIC BACKGROUND /	AGE	1-5	6-10	11-15	16+
White		73.1	65.4	63.0	66.0
Black		9.8	13.7	13.3	12.4
Spanish-American		5.4	6.4	6.3	5.1
American Indian		0.3	0.4	0.6	0.6
Oriental		0.9	0.6	0.5	0.5
Other		0.2	0.1	0.1	0.1
Blank/Unknown		8.8	12.0	14.9	13.8
Cannot Report		1.6	1.4	1.2	1.4

100

UTILIZATION OF DATA FOR REHABILITATION

Table 5
Percent of Hearing Impaired Students with Specified Additional Handicapping Conditions, By Age Group, United States: 1972-73 School Year

ADDITIONAL HANDICAPPING CONDITIONS /	AGE	1-5	6-10	11-15	16+
None		61.4	56.2	55.2	59.6
Brain Damage		3.6	3.5	3.5	3.2
Cerebral Palsy		1.6	2.1	2.4	4.2
Epilepsy		0.6	0.6	0.7	0.6
Heart Disorder		2.1	3.2	1.8	0.8
Mental Retardation		2.4	3.9	7.2	8.6
Orthopedic		1.2	0.6	0.7	0.7
Perceptual/Motor		1.5	3.7	3.0	1.0
Emotional/Behavioral		3.2	5.2	5.0	3.7
Severe Visual		2.9	3.9	3.4	2.7
Other		2.2	2.2	2.8	2.7
Blank/Unknown		17.3	14.5	14.1	12.3

in the youngest age group mean that the population is shifting in this direction? Most probably not; what these figures reflect is more likely a question of access to preschool programs for the deaf. It may be that black and Spanish-American children do not have equal opportunity to enter such preschool programs — or it may mean that their parents do not make use of available preschool programs to the same extent — or it may mean other variables are at work which we have not even guessed. At any rate, this is *what* is happening; *why* it is happening remains an open question.

Table 5 turns to the question of what additional handicapping conditions the students have, as reported by their educational program. The data for the youngest age group is the least adequate, but for the other three older groups the percentage of

Table 6
Average Achievement and I.Q. Test Scores for Hearing Impaired Students with Specified Additional Handicapping Conditions, 1970-71 School Year

	Paragraph Meaning Mean Grade Equivalent	Arithmetic Concepts Mean Grade Equivalent	Mean Nonverbal I.Q. Score All Tests Taken Together
All Students	3.0	3.4	95
Cleft Lip/Palate	3.5	3.7	98
Orthopedic	3.2	3.7	95
Cerebral Palsy	2.9	3.4	89
Epilepsy	2.9	3.3	93
Severe Visual	2.8	3.1	93
Emotional/Behavioral	2.7	3.0	95
Perceptual/Motor	2.6	2.7	92
Heart Disorder	2.5	2.6	95
Brain Damage	2.4	2.6	—
Learning Disability	2.4	2.6	89
Mental Retardation	2.2	2.1	69

UTILIZATION OF DATA FOR REHABILITATION

Table 7

**Number and Percentage Distribution of Leaving Students, Age 16 and Over,
Enrolled in Participating Special Educational Programs for the Hearing
Impaired, By Age: United States 1971-72 School Year**

All Ages	Number	Percent
Total	2,317	100.0
Age 16	326	14.1
Age 17	261	11.2
Age 18	414	17.9
Age 19	651	28.1
Age 20	437	18.9
Age 21	173	7.5
Age 22 Years & Over	55	2.4

Table 8

**Number and Percentage Distribution of Leaving Students, Age 16 and Over,
Enrolled in Participating Special Educational Programs for the Hearing Impaired,
By Condition Under Which Students Left School Program:
United States, 1971-72 School Year**

Condition Under Which 16 Year Old Students and Over Left School	Number¹	Percent
All Conditions	2,132	100.0
Graduated-Academic	752	34.0
Graduated-Vocationally	304	14.3
Graduated-Certificate	184	8.6
Graduated-No Degree Indicated	181	8.5
Transferred	339	15.9
Drop-Outs	253	11.9
Dismissed	143	6.7
Deceased	3	0.0

¹Excludes 185 leaving students for whom data on condition of school termination were not reported.

students without any additional handicapping conditions does not appear to be changing very much. These data are therefore at variance with some of the reports of substantially increasing numbers of multi-handicapped children — or more accurately, the percentages do not seem to be changing, although the actual numbers are increasing as a result of the increase in the size of the school-age hearing impaired population due to rubella. Again, these are data reported by schools to our Office; they have not been independently verified. Table 6 illustrates another problem in the use of the global term, "multi-handicapped." This table shows two achievement test scores and nonverbal I.Q. test scores for groups of students reported to have various specific additional handicapping conditions. As can be seen, not all groups score significantly below the overall means, and some groups, for example, those with cleft

UTILIZATION OF DATA FOR REHABILITATION

Table 9

Number and Percentage Distribution of Leaving Students, Age 16 and Over, Enrolled in Participating Special Educational Programs for the Hearing Impaired, By Condition Student Terminated School, According to Mean IQ Score: United States, 1971-72 School Year

Condition Under Which 16 Year Old Students & Over Left School	Mean Non-Verbal IQ Score	Number of Students Tested	Percent Tested
All Conditions	95	1,542	67.0
Graduate No Degree Indicated	102	118	65.0
Graduate Academic	104	513	71.0
Graduate Vocational	94	241	79.0
Graduate Certificate	88	133	72.0
Transfer	89	201	59.0
Drop-Outs	87	175	69.0
Dismissed	86	89	62.0

lip or cleft palate, score a good bit above the overall averages. Whatever else this means, it demonstrates that "the multi-handicapped" as a group are very diverse and, educationally at least, do not necessarily seem to come off any the worse for their additional problems in all cases.

Let us turn now to our second set of data, relating to students who leave educational programs for the hearing impaired. Any student who is known to us to be in a given program one year, but who is no longer in that program the following year, is by definition a "school leaver." Clearly, for younger children most of the school leavers are those who transfer to another program for one reason or another. Our data

Table 10

Number and Percentage Distribution of Leaving Students Age 16 and Over, Enrolled in Participating Special Educational Programs for the Hearing Impaired By Condition Student Terminated Program, According to Additional Handicapping Condition: United States, 1971-72 School Year

Condition Under Which 16 Year Old Students and Over Left School	All Leaving Students		No Additional Handicaps		One or More Additional Handicaps		Data Not Reported	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Conditions	2,317	100.0	1,372	59.0	622	27.0	323	14.0
Graduated-Academic	725	100.0	530	73.0	91	13.0	104	14.0
Graduated-Vocationally	304	100.0	206	68.0	64	21.0	34	11.0
Graduated-Certificate	184	100.0	74	40.0	102	55.0	8	5.0
Graduated-No Degree Indicated	181	100.0	110	61.0	34	19.0	37	20.0
Transferred	339	100.0	149	44.0	131	39.0	59	17.0
Drop-Outs	253	100.0	140	55.0	87	34.0	26	11.0
Dismissed	143	100.0	66	46.0	63	44.0	14	10.0
Deceased	3	100.0	1	N=1	1	N=1	1	N=1
Data Not Reported	185	100.0	96	52.0	49	26.0	40	22.0

UTILIZATION OF DATA FOR REHABILITATION

will therefore concentrate on school leavers aged 16 or above, a group numbering about 2,300 for the 1971-72 school year when we collected these data. Table 7 shows the numbers of these students by age. It is clear that most students leave school at age 18, 19, or 20. Table 8 shows the conditions under which these students left school — note that nearly 400 of these students either dropped out or were dismissed, and these are figures for a single year. The last two tables show some significant characteristics of students who left school for various reasons. Table 9 gives the mean I.Q. test scores for these students; note the large gap between academic graduates and those who dropped out or were dismissed. This certainly says something about the groups with whom you rehabilitation people are working and will be working in the years ahead. Table 10 shows the great differences in percent of each group who are reported to have additional handicapping conditions. Of the academic graduates, 13% are reported to have additional handicapping conditions, compared to 55% of those who graduated with a certificate of attendance, and 44% of those who were dismissed by the schools. Clearly, there is much here of relevance for rehabilitation services planning.

This concludes our presentation, which was meant to give you a sample of the kinds of information which we have collected in the past, which have potential relevance to rehabilitation planning. Our focus up to now has been on the educational programs, but some of this information can be of value to you. As we move in the next few years into studies of vocational and career education in the schools, what data do you need for your planning which we can obtain for you on a national basis? Our future usefulness to you will depend on your demands on us for specific information which you need in your work and your planning. What can we do for you?