

INCIDENCE AND PREVALENCE OF COMMUNICATIVE DISORDERS IN A MIDSOUTHERN PUBLIC SCHOOL SYSTEM IN U. S. A.

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This study evaluated incidence and its demography in the Nashville public schools in grades K through 12 for the academic years 1978-79 through 1981-82. The Board of Education supplied the data on all children identified with communicative disorders, which included the served, underserved, and unserved. The results indicated an average enrollment decline of 3.24% and an average prevalence of 2.95% for primary communicative disorders in the school population. Incidence figures declined from 8.09 to 1.19%, and revealed a higher number of blacks and others than whites. The results also differentiated the gross and net incidences.

The incidence of communicative disorders is an important, related dimension associated with their prevalence. Although there is an apparent recognition of the disparate data on the prevalence of communicative disorders, their incidences remain (virtually) nonexistent because of it. Prevalence and incidence figures are both confounded by extraneous variables, but the latter is additionally confounded by its dependence on the former.

This study was initiated because " Estimates of incidence, or number of new cases occurring during a given time period, are usually not available " (Leske, 1981a, p. 217). Studies which were available had two major shortcomings. First, none had addressed the issue from a comprehensive perspective. Those studies which " accurately " assessed incidence had done so as a byproduct of other purposes or with a limited scope. Studies in the former category included Des Roches (1976) and in the latter category included Barr, Anderson, and Wedenberg (1973) ; Lipscomb (1972); and Weber, McGovern, and Zink (1967). Second, incidence and prevalence had not been differentiated or had been confused in the profession of speech-language pathology (Milisen, 1971; Voelker, 1943 ; Silverman

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& Zimmer, 1975 ; Warr-Leeper, McShea, & Leeper, 1979) and audiology (Stuart, Lewis, & Barry, 1973 ; Hogan, 1973 ; Lipscomb, 1972) and related disciplines (Matthews, 1971; Keane, 1972; Omer, 1972; Bensberg & Sigelman, 1976). Gillespie and Cooper (1973) were an exception.

In the epidemiological literature (Lillienfeld, 1976 ; Friedman, 1980), Paul (1966) stated that " The essential differences. . . , between incidence and prevalence are that the latter refers to frequency at a point in time ; The former to cases arising during a period of time " (p. 72). The citations in speech-language pathology and audiology have generally used both terms to mean prevalence. In these instances the prevalence reflected either a percentage, frequency of occurrence, or both at a given point in time (that is, a point prevalence—see Lillienfeld, 1976 ; Friedman, 1980). As an exception, Lipscomb (1972) used the term prevalence to mean incidence. Considering other available, related data, such as GAO (1981a, 1981b) and OSERS (1980), the lack of distinction between incidence and prevalence is more than a professional oversight. This assertion is supported by Marozas, May, and Lehman (1980) who found this to be a general problem in special education. They asserted aptly " confusion in need of clarification" (p. 229).

Of late, Bensberg and Sigelman (1976), Healey et al. (1981, representing ASHA's position), Stewart (1981), Leske (1981a, 1981b), and Stewart and Spells (1982) have taken notice of this discrepancy. In addition, these studies and Fein (1983a, 1983b) present a number of other, current, relevant findings and issues, which reflect the state or lack of knowledge on communicative disorders. They do not, however, address the incidence of these pathologies.

The present study subordinates prevalence, and focuses on incidence directly as it relates to a midsouthern, metropolitan public school system. Two major issues related to this area are germane to the present study and worth some-consideration.

School-age children. First, Voelker (1943) and Healey et al. (1981) remarked! that prevalence data on communicative disorders reflected a large or disproportionate number of studies directed at the school-age population. Although this fact is true, it warrants continued and/or renewed support rather than criticism.

Consideration for this point of view lies in the generally availability of these data sources, and changes therein are easily detected if monitored (for example, see Spells & Stewart, 1982 ; Stewart & Spells, 1983). By monitoring the U. S. Census, Fein (1983b) considered a different, yet related and similar,

approach. Although his operating assumptions and conclusions were erroneous, he evaluated the Census in 1980 and projections for 2050 and their implications on communicative disorders, including school-age children.

With this orientation three approaches are available. First, monitoring school-age children in educational systems serves as a potential indicator of adult trends, this can be seen in the 1976 Survey of Income and Education (SIE) published by the U. S. Bureau of the Census (1976). Second, school data serve as a source for determining the impact of diseases and epidemics on the community, including first-trimester pregnancies. Third, the rationales for early intervention are outlined by McConnell and Liff (1975) and others; their results are reported by Sax (1972), Helmick (1976), and others.

Purposes. In considering the foregone issues, the present study was developed to determine the incidence of primary speech, language, and hearing disorders; these disorders as related handicaps were beyond the scope of the present study. A second purpose was to develop a demographic profile of the data. Additionally, the latter purpose was germane to the integrity of the investigation.

Method

The research design utilized in this study have been reported elsewhere. They were first outlined by Stewart (1981). Later, they were further developed and refined by Stewart and Spells (1982), Spells and Stewart (1982), and Rudolph (1982). Wilson and Stewart (1983) and Mitchell (1983) also utilized the design, with minor modifications. Each of these investigations had limitations, which were applicable herein. The specifics, which were important to this investigation, are described subsequently.

Data Source

School System. The Data were obtained from the computer files of the Metropolitan Board of Education which served the entire public school system of Davidson County, Tennessee; this included the city of Nashville.

Type of Data. The request for data included all children identified with and receiving services for communicative disorders. Communicative disorders were defined by the broad terms speech, language, and hearing (Tennessee State Board of Education, 1979; State of Tennessee, 1982b). This request yielded several areas of data. First, the data yielded all primary communicative disorders; this addressed those children served, underserved, and unserved. Second, the data

yielded information on all primary handicaps that utilized services for communicative disorders ; this addressed primary communicative disorders and other primary handicaps. Third, the number of children in therapy for primary and secondary (other primary) communicative handicaps was included as a consequence of the request. The specific data request circumvented the issues of problems developed earlier.

Enrollment

The **data** covered the academic years 1978-79 through 1981-82. All data were end-of-year figures. The enrollment figures were obtained from the State of Tennessee (1980, 1981, 1982, 1983) and Publication Committee (1980, 1981, 1982, 1983). This data included the racial groups of whites, blacks, and others, along with their distributions (Pupil Accounting & Transfers, 1979, 1980, 1981, 1982, 1983). From these sources the major race and sex ratios were computed for each year.

Bilingual Program. Enrollment data included children whose ethnic origins were classified as others. These children were primary Hispanic, Asians, and American Indians.

The actual number of students considered bilingual was unknown ; however, the school system had an ongoing bilingual program. This program was supervised by the Division of Foreign Language. Because the department operated independently from the Office of Special Education, the number of bilinguals could not be determined. Therefore, the number of bilinguals with communicative disorders was not determined. Only the number of children labeled others with communicative disorders was available.

Other Considerations

Professional qualifications. During the survey period, there were 40 Speech-language pathologists employed, along with one audiologist whose services were contracted. All speech-language pathologists were employed by the Office of Personnel. Minimal requirements for the positions included a bachelor's degree, college transcript, and a Tennessee Teacher's Certificate. The Office of Special Education preferred, but did not require, the master's degree and/or ASHA certification.

Assessment and criteria. In evaluating speech, the Goldman-Fristoe Test of Articulation (1966) and the Templin-Darley Test of Articulation (1969) were generally used. Language was generally assessed with the Peabody Picture Vocabulary Test (Dunn, 1965). Other language tests included the Test for Auditory Comprehension of Language (Carrow, 1973) ; Elicited Language Inventory (Carrow, .

1974), Illinois Test of Psycholinguistic Abilities (Kirk, McCarthy, & Kirk, 1968), and the Boehm Test of Basic Concepts (1971). It was unclear whether or not cultural adjustments were allowed for speech and/or language differences.

Screenings for hearing were conducted by each speech-language pathologist ; however, there were no standard procedures used. According to the Division of Special Education, the speech-language pathologists were instructed to conduct hearing screenings in accordance with their professional training in this area. Students failing the screening were referred to the audiologist for further testing.

Identification. The protocol for speech, language, and hearing screenings included kindergarten, first, second, and fifth grades. Other students were screened as they were referred by their classroom teachers.

The Board of Education provided primary or related services for communicative disorders for students enrolled in the public schools. However, students in private schools and children 4 years and younger were served, provided they were transported to and from the schools.

Data Analysis

Incidence. According to Paul (1966), " Incidence means the frequency with which a specific event occurs.... within a defined population during a stated period of time " (p. 71). This definition is consistent with more recent epidemiological publications such as Lillienfeld (1976) and Friedman (1980). The period of time in this study represented year-end data for each academic year under investigation. The measurement of incidence was done in terms of frequency of occurrence and percent of the total.

Prevalence. Prevalence data were of secondary concern in this investigation.. They were included in gross format for information. According to Paul (1966), " Prevalence, , indicates the proportion of persons in a defined population who, at a specified time, are affected or have been affected " (p. 72). The measurement of prevalence was done in the same units as incidence.

Results

Table 1 presents an overview on the total enrollment and the prevalence of primary communicative disorders in the Nashville public schools for the four academic years 1978-79 through 1981-1982. For example, in the most recent year, 1981-82, there are 66,734 children in grades kindergarten through 12. This enrollment represents a decline (—) of 3.06% over the previous year. The racial distribution for whites, blacks, and others is 65.5, 33.2 and 1.3% respectively.

During this same period, there are 1,935 speech, language, and hearing disorders of a primary nature in the schol population. This represents 2.90% of the total enrollment; this is also the prevalence of communicative disorder. Of this percentage, the racial distribution is 66.2, 33.3 and 0.5%, respectively. There is little apparent difference between the racial distributions of the population and of the communicative disordered. This is also generally true for the other years displayed in the table.

TABLE I

Enrollment and Primary Communicative Disorders Totals for Academic Years 1978-1979 through 1981-82 by Racial Distribution in the Nashville Public Schools with Incidence Data for Communicative Disorders.

Academic Year Race	Enrollment		Population Communicative Disorders		Incidence	
	N	%	Prim	%	N	%
1981-82	66,734	-3.06	1,937	2.90	—195	—9.15
Whites	66.5		66.2			
Blacks	33.2		33.3			
Others	1.3		0.5			
1980-81	68,837	-3.94	2,132	3.10	43	2.07
Whites	65.7		67.9			
Blacks	33.0		31.2			
Others	1.3		0.9			
1979-80	71,662	-2.94	2,089	2.90	150	7.74
White	67.1		67.3			
Blacks	32.0		31.4			
Others	0.9		0.7			
1978-79	73,830	-2.88	1,939	2.88		
Whites	68.1		68.0			
Blacks	31.3		30.8			
Others	0.6		0.8			
Unknowns			0.4			

Table I further reveals that the number of children with primary communicative disorders decreased by 195 relative to the previous year. This number represents a decline of 9.15%. Based on the epidemiological literature, it is inappropriate to refer to a decline as incidence. The other years reflect increases in the number of disorders.

The salient factors in the table reveal that the overall decline in enrollment is slightly more than 3%. The prevalence of primary communicative disorders in school-age children is slightly less than 3%. The racial distributions for the population and for the communicative disordered are similar. It may be of value to note that the racial group labeled others reveals generally a lesser percentage of communicative disorders relative to their presence in the population; the implications of this are not discernible from the data. Along similar lines, the prevalence of approximately 3% is stable across the years, even with the consistent decline in enrollment.

TABLE 2

The (Net) Incidence, Reported by Frequency and Percentage, of communicative Disorders by Race and Sex in Academic Year 1979-80.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	6	50	43	99	4.0	33.3	28.7	66.0
Males	-12	36	21	45	-8.0	24.0	14.0	30.0
Females	18	14	22	54	12.0	9.3	14.7	36.0
Blacks	21	25	5	51	14.0	16.7	3.3	34.0
Males	15	21	-3	33	10.0	14.0	2.0	22.0
Females	6	4	8	18	4.0	2.7	5.3	12.0
Others	2	-2	0	0	1.3	-1.3	0.0	0.0
Males	4	0	0	4	2.7	0.0	0.0	2.7
Females	-2	-2	0	-4	-1.3	-1.3	0.0	2.7
Totals	29	73	48	150	19.3	48.7	32.0	100.0
Males	7	57	18	82	4.7	38.0	12.0	54.7
Females	22	16	30	68	14.7	10.7	20.0	45.3

Tables 2 through 4, reflecting academic years 1979-80 through 1981-82 respectively, show the incidences of speech, language, and hearing disorders by race and sex. The tables reveal total new cases numbering 150, 43 and -195 (decrease of) for these years, respectively. On close inspection of these tables, whether empirical or intuitive, an apparent problem arises with this approach. Table 3 depicts this problem best.

Table 3 uncovers one of the major, fundamental problems in this data analysis. In the totals, the 60 children seen for speech exceed the total incidence figure of 43. The magnitude of this difference can be seen best in the percentages. The table shows 139.5% for speech versus 100.0% for the total ; for males it is 104.7% versus the total of 83.7%. Only the decline balances the percentages to fall to the 100.0% total. Thus, Tables 2, 3 and 4 are net incidences,, and by implication, Table 1 also reflects net incidences.

TABLE 3

The (Net) Incidence, Reported by Frequency and Percentage, of Communicative Disorders by Race and Sex in Academic Year 1980-81.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	34	-2	-3	29	79.1	4.7	7.0	67.4
Males	19	-2	-1	16	44.2	-4.7	-2.3	37.2
Females	15	0	-2	13	34.9	0.0	-4.7	30.2
Blacks	19	-6	-4	9	44.2	-14.0	-9.3	20.9
Males	23	-2	-3	18	53.5	-4.7	-7.0	41.7
Females	-4	-4	-1	-9	-9.3	-9.3	-2.3	-20.9
Others	7	-2	0	5	16.3	-4.7	0.0	11.6
Males	3	-1	0	2	7.0	-2.3	0.0	4.7
Females	4	-1	0	3	9.3	-2.3	0.0	7.0
Totals	60	-10	-7	43	139.5	-23.3	-16.3	100.0
Males	45	-5	-4	36	104.7	-11.6	-9.3	83.7
Females	15	-5	-3	7	34.9	-11.6	-7.0	16.3

The approach present in these tables is valuable because it is instructive and, at the same time, misleading. The demographic profiles in the tables include both new and lost cases ; this distorts the data and defeats the main purpose to this study. By considering only the new cases, Tables 5, 6 and 7 circumvent the problem, and address more specifically the issue of incidence.

In actuality, Table 5 through 7, reflecting years 1979-80 through 1981-82, respectively, do not appear more different than Tables 2 through 4 ; that is, the **trends** generally are similar. This is not the case in principle.

. TABLE 4

The (Net) Incidence, Reported by Frequency and Percentage, of Communicative Disorders by Race and Sex in Academic Year 1981-82.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	-92	-76	3	-165	-47.2	-39.0	1.5	-84.6
Males	-42	-49	3	-88	-21.5	-25.1	1.5	-45.1
Females	-50	-27	0	-77	-25.6	-13.8	0.0	-39.5
Blacks	8	-35	7	-20	4.1	-17.9	3.6	-10.3
Males	-5	-28	6	-27	-2.6	-14.4	3.1	-13.8
Fe males	13	-7	1	7	6.7	-3.6	0.5	3.6
Others	-7	-3	0	-10	-3.6	-1.5	0.0	-5.1
Males	.4	-1	0	-5	-2.1	-0.5	0.0	-2.6
Females	-3	-2	0	-5	-1.5	-1.0	0.0	-2.6
Totals	-91	-114	10	-195	-46.7	-58.5	5.1	100.0
Males	-51	-78	9	-120	-26.2	-40.0	4.6	61.5
Females	-40	-36	1	-75	-20.5	-18.5	0.5	38.5

First, Tables 5, 6 and 7 indicate the incidence of primary communicative disorders. In reference to the previous academic year, the tables indicate that the incidences are 169, 64 and 23, respectively. These figures represent percentages of 8.09, 3.00 and 1.19 respectively. This also represents decline rate of 2.64 between Tables 5 and 6 and 2.78 between Tables 6 and 7. The decline is generally constant in relative terms. Second, the tables reveal that the figures across the several years do not consistently match the racial distribution in the school system; in general, they reflect a higher incidence for blacks and others than whites. Table 5, reflecting 1978-80, comes close, however. Thus, unlike the prevalence and population distributions, which are in alignment for race, the incidence distribution is not.

TABLE 5

The (Gross) Incidence, Reported by Frequency and Percentage, of Communicative Disorders by Race and Sex in Academic Year 1979-80.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	18	50	43	111	10.7	29.6	25.4	65.7
Males	0	36	21	57	0.0	21.4	12.4	33.7
Females	18	14	22	54	10.7	8.3	13.0	32.0
Blacks	21	25	8	54	12.4	14.8	4.7	32.0
Males	15	21	0	36	8.9	12.4	0.0	21.3
Females	6	4	8	18	3.6	2.4	4.7	10.7
Others	4	0	0	4	2.4	0.0	0.0	2.4
Males	4	0	0	4	2.4	0.0	0.0	2.4
Females	0	0	0	0	0.0	0.0	0.0	0.0
Totals	43	75	51	169	25.4	44.4	30.2	100.0
Males	19	57	21	97	11.2	33.7	12.4	57.4
Females	24	18	30	72	14.2	10.7	17.8	42.6

Third, the sex ratios are not as extreme in these tables as they are in Tables 2 through 4, respectively. In Tables 5 and 6 they are 1.3 : and 2:4 : 1, respectively Table 7 reflects, however, a male-to-female ratio of 0.6 : 1 ; this sex ratio reflects a greater number of females than males. Fourth, Tables 6 and 7 indicate no incidence for language disorders in 1980-81 and 1981-82, respectively ; for 1979-80 (Table 5) the incidence is 75. Table 6 indicates no incidence of hearing disorders as well. The incidence of 10 in 1980-82 is approximately 50% of the incidence of 21 seen in 1979-80 (Table 5). Fifth, with respect to no incidences, this occurs without exception for the group labeled others, across the years. The meaning and implication of these findings are unclear.

Based on the more salient results, Table 1 should be modified. Under the column labeled incidence, the modified figures should read 23 and 1.19% (1981-

TABLE 6

The (Gross) Incidence, Reported by Frequency and Percentage, of Communicative Disorders by Race and Sex in Academic Year 1980-81.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	34	0	0	34	53.1	0.0	0.0	53.1
Males	19	0	0	19	29.7	0.0	0.0	29.7
Females	15	0	0	15	23.4	0.0	0.0	23.4
Blacks	23	0	0	23	35.9	0.0	0.0	35.9
Males	23	0	0	23	35.9	0.0	0.0	35.9
Females	0	0	0	0	0.0	0.0	0.0	0.0
Others	7	0	0	7	10.9	0.0	0.0	10.9
Males	3	0	0	3	4.7	0.0	0.0	4.7
Females	4	0	0	4	6.3	0.0	0.0	6.3
Totals	64	0	0	64	100.0	0.0	0.0	100.0
Males	45	0	0	45	70.3	0.0	0.0	70.3
Females	19	0	0	19	29.7	0.0	0.0	29.7

82); 64 and 3.00% (1980-81) and 169 and 8.09% (1979-80). These modifications represent the (gross) actual incidences, and are consistent with the epidemiological orientation.

Discussion

The major purpose of this study was to determine the incidence of primary communicative disorders in a selected, midsouthern public school system. The secondary purpose was to develop a demographic profile of the data.

The long, rich history on the prevalence of communicative disorders indicated that prevalence and incidence data had been confused and ignored. Because of this, in part, incidence figures remained (virtually) nonexistent or limited at best. In addition prevalence and incidence figures were both confounded by

TABLE 7

The (Gross) Incidence, Reported by Frequency and Percentage of Communicative Disorders by Race and Sex in Academic Year 1981-82.

Race Sex	Frequency				Percentage			
	Spch.	Lang.	Hear.	Totl.	Spch.	Lang.	Hear.	Totl.
Whites	0	0	3	3	0.0	0.0	13.0	13.0
Males	0	0	3	3	0.0	0.0	13.0	13.0
Females	0	0	0	0	0.0	0.0	0.0	0.0
Blacks	13	0	7	20	56.5	0.0	30.4	87.0
Males	0	0	6	6	0.0	0.0	26.1	26.1
Females	13	0	1	14	56.5	0.0	4.3	60.9
Others	0	0	0	0	0.0	0.0	0.0	0.0
Males	0	0	0	0	0.0	0.0	0.0	0.0
Females	0	0	0	0	0.0	0.0	0.0	0.0
Totals	13	0	10	23	56.5	0.0	43.5	100.0
Males	0	0	9	9	0.0	0.0	39.1	39.1
Females	13	0	1	14	56.5	0.0	4.3	60.9

its dependence on the former. The present study was developed to address the issue of incidence and its complexity.

The design of the study was based on methodologies and procedures utilized and tested by others. The data included all children identified with and receiving services of communicative disorders. This allowed for the analyses of primary communicative disorders which included the served, underserved, and unserved it excluded secondary communicative handicaps.

The limitations associated with this investigation were no different than those outlined in other, previous investigations. The scope of these limitations were defined by Stewart (1981), Stewart and Spells (1982), Rudolph (1982), Wilson and Stewart (1983), and Mitchell (1983). These limitations involved essentially the utilization and protocols of the assessment tools and the homogeneity of the professional backgrounds of the speech-language and hearing personnel.

These limitations were important considerations, but did not invalidate this study. The results were consistent with other related studies ; that is, in those

areas where overlap or redundancy were necessary or occurred. In addition, the data and their source had been monitored for more than several years with no unusual patterns developing.

Incidences. The results indicated that the incidences for the academic year 1981-82, 1980-81 and 1979-80 were 1.19, 3.00 and 8.09%, respectively. These incidences differed from those found in the national census of school-age children and those for the State of Tennessee in 1980-81 and 1981-82, as derived from OSERS(1980, 1981, 1982). They also differed from those derived from DesRoches (1976). In her study incidences were also variable ; as in this study, there was a declining trend, however. In this study the percent of decline was much less extreme than in hers. Assuming that Weber et al. (1967) correctly determined incidence figures for hearing disorders, the range and average for incidence of speech, language, and hearing disorders in this study were greater than in theirs.

From the data the incidences were clear. The reasons or causes for the variability across the several years were unclear. Based on the general symmetry of the population data presented in Table 1, one would expect the incidences to be symmetric.

The conceptual framework presented in the Introduction indicated that there was a need to determine incidence. Studies evaluated in this area revealed a misconception and/or confusion about incidence and prevalence. The contrasts between Table 2 through 4 and Tables 5 through 7 revealed more concretely the problem of counting new cases. Prevalence was independent of the problem ; only when assessing the number of new cases does the problem of incidence arise. On the other hand, the distinction between prevalence and incidence was a matter of orientation, definition, and application. The present study focused on incidence rather than prevalence.

Incidence and prevalence create some other associated problems. First the epidemiological literature is unclear, generally, on how to count a person with a communicative disorder which has been remediated and subsequently acquires another one later in life. Second, Fein (1983a), of late, mentioned the problem of the person who is deaf and classified as hearing-impaired only ; this person will, in all probability, have language and speech impairments as well. In the broader context, the issue is whether or not the person should be counted in each category of service need.

The child who is communicatively handicapped should be counted once for the general census, that is, prevalence and incidence counts. On the other hand, it is not unrealistic to count the child in each category or needed service services.

From the perspective on clinical management, this approach is desirable. This perspective is advocated by McDermott (1981).

Stewart and Spells (1982) found that 0.1% of the 1979-80 public school-age children in Nashville had multiple communicative disorders. Supporting Fein (1983a) the implications on therapy and resources have not been considered. A specific, related area associated with duplicated counts, involving learning-disabilities and communicative disorders, was considered by Spells and Stewart (1982) and Stewart and Spells (1983).

Demographics. The incidence figures favored blacks and others rather than whites. This finding was contrary to the population data. The group labeled others did not reveal new cases for language and hearing disorders during the several years. This finding was consistent, however, with Stewart (1981) and Stewart and Spells (1982), who found relatively few language and no hearing disorders for this group. They also found male-to-female ratios of 1.7 : 1 ; in this study the sex ratio was 1.4 : 1. DesRoches (1976) and GAO (1981a, 1981b) were in agreement with the other studies.

The reason there were no new cases of language disorders in academic years 1980-81 (Table 6) and 1981-82 (Table 7) is unclear. Indications from Tables 3 and 4 are that they were decreasing. This finding is in opposition to DesRoches (1976), who found language disorders increasing while speech disorders were decreasing. This lack of clarity is additionally and especially true for children labeled others. There are, however, two plausible explanations. First, children in this group were considered bilingual and, therefore, problems of language were considered as such; that is, children were enrolled in special programs as bilinguals. Second, this group's native language was English or was dominated by English and, therefore, manifested no communicative disorders. This problematic area is one associated with prevalence rather than incidence.

Summary. The review of the literature revealed limited data on the incidence of communicative disorders. Some of the available studies were actually prevalence studies. In other quarters, it was unclear whether the lack of data was a function of oversight, ignorance, confusion, or any combination of these.

Unlike the prevalence data for the Nashville public schools, the incidence data revealed a declining trend rather than a stable one. Also, unlike the prevalence data, the incidence figures revealed a general propensity for blacks and others over whites. The sex ratio was less extreme for incidence than for communicative disorders and the school population. The results delineated the gross and net incidences. The topic warrants further research.

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