

Speech Communication: The Other Side — Communication Disorders

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Abstract

The purpose of this paper is to review the issues associated with the prevalence of communication disorders. As professionals in speech communication, we study the functions of content and relationships in communication. These functions serve our practical and social needs. The foundation of our studies is the communications model. The model serves as a basis for better understanding the communication processes and as a means for improving them. Oftentimes, however, we overlook the importance of the symbol system and their distortions.

Oftentimes, in teaching students about the components of a communication model, little emphasis is placed on the importance of the systems of symbols as they are reflected in sounds, words, and larger units. One of the reasons for this may be that other disciplines, linguistics and speech-language pathology and audiology, are concerned with them. They should be studied more, however, by speech communicators.

One of the most important reasons is that systems of symbols are a potential source of noise that detract from the communication process. A second reason is that speech communicators are able to identify (screen) persons who may have communication disorders; in these cases, persons can be referred to a speech-language pathologist or audiologist for professional evaluation. This second reason reflects the general orientation of this paper.

The purpose of this paper is to present and to introduce some current, available sources of data on the prevalence of primary communicative disorders. These data sources appear either in the professional literature on speech-language pathology and audiology or in other accessible, reliable sources.

The paper's contributions are several. First, it presents data which were overlooked in the development of current issues and resources on communicative disorders. This data would have influenced the apparent agreement on what appears to be known about prevalence estimates. Second, the study introduces data sources on language disorders and, third, on communicative disorders in preschool children. Space does not permit an analysis and evaluation of the overlooked data sources relative to the problematic sources. This study will focus, therefore, primarily on the validity of current thinking and discuss relevant issues.

The present paper takes issue with recent publications which discuss the status of prevalence data on communicative disorders. Leske (1981a) discusses the difficulty in obtaining prevalence data, with incidence data unavailable and even more difficult to obtain. She states also, "Despite the magnitude and socioeconomic impact of the communicative disorders, epidemiologic data on these disorders are limited and often of poor quality" (p.217). In addition, Healey et al. (1981) delineate areas on prevalence estimates where data are lacking and needed. For example, they state: "The incidence and prevalence of language and language learning problems in children and adults are not known" (p.3); and "As a general rule, little systematic data are available on preschool children, five years of age and under, that may be quoted with any measure of reliability" (p.5). Leske (1981b) agrees with these observations. They are initially found in ASHA (1977). The problem with these citations and the several sources is that they are misleading, if not incorrect and, therefore, do not reflect adequately the prevalence status of communicative disorders.

There are several reasons for the development of this paper. First, prevalence estimates remain one of the many elusive, challenging problems associated with the profession. Although other matters, such as acceptable, manageable caseloads, must be resolved, the prevalence of communicative disorders is one of the major dimensions necessary in understanding future personnel utilization, resources, and potential. Existing and implicit approaches on professional needs or estimates are currently found in Fein (1983a, 1983b, 1983c, 1983d). Fein and Synder (1983) and ASHA (1977) are inadequate because the foundations and underlying assumptions for these projections are unreliable. Some implicit or explicit limitations are found in Fein (1983c) and Punch (1983b, 1983c). Other limitations are explicit in McDermott (1981).

This position is contrary to what is generally accepted. For example, ASHA (1980) and some of their subsequent publications assert that 10% of the population have communicative disorders. On the other hand, the Panel on Communicative Disorders (1980) states that 10% of the population are affected in varying degrees with disorders of human communication. Although their statistics are the same, the latter is more tempered than the former. It implies secondary communicative handicaps while the former does not. Communicative disorders as related or secondary handicaps have been ignored in the literature.

Two other approaches to prevalence estimates are available. ASHA (1981) and Wilber (1982) present an approach which is least acceptable. They give the number of communicatively handicapped persons without reference to the total number in the population. The former citation clearly implies communicative disorders of a multiple nature (see ASHA, 1981, pp. 6, 7). The third approach involves the rate per 100 individuals. This approach can be seen in currently available ASHA brochures targeted for the public.

According to Leske (1981a, 1981b), Healey et al. (1981), ASHA (1977), Bensberg and Sigelman (1976), and others, the disparity in prevalence estimates found in the professional literature is due to inadequate experimental designs, including methodology, procedures, and definitions. On the contrary, Stewart and Spells (1982) found commonality for many of the studies they considered. It was necessary, however, to make adjustments in orientation.

The disparity in the reported results of many studies is not the problems of methodology and procedures; it is the problem of dimensionality. This problem includes the associated and/or confounding variables affecting prevalence estimates on communicative disorders. These variables include maturation and development relative to age and/or grade, race, sex, population size, learning disabilities, multiple communicative disorders, assessment instruments and criteria, the experience and depth of the evaluators, and cultural-linguistic diversity. Superficially, these variables are primarily concerned with methodological and/or procedural elements of the research design. Their individual effects on the prevalence estimate are unknown for the most part, hence, the lack of dimensionality.

Several illustrations may be helpful here. First, the rationales for early intervention are outlined by McConnell and Liff (1975) and others. Their results versus normal development are reported by Sax (1972), Helmick (1976), and others. Second, DesRoches (1976), Stewart (1981) and Stewart and Spells (1982) found sex ratios of 1.85:, 1.80:, and 1.80:1, respectively. Third, Stewart (1981) and Stewart and Spells (1982) found no quantitative differences between the races for communicative disorders. They found, however, qualitative differences for race and sex. For example, they discovered blacks were overassessed for language disorders. Thus, with the quantification of these several variables, as well as the others, the prevalence estimates for communicative disorders become more reliable and valid. However, there is more to the concept of dimensionality.

In addition to the variables listed above, three other major variables associated with dimensionality warrant special attention. First, is the type of estimate. There are large differences between prevalence versus service delivery estimates. Studies which include and/or contrast these perspectives are found in Stewart and Spells (1982), OSERS (1980), and DesRoches (1976). The more general, special education model and its consequences are discussed by McDermott (1981). She calls these perspectives unduplicated versus duplicated counts. The specific problem for speech-language pathology and audiology is discussed, in part, by Fein (1983a). In short, the former is a head count. It is smaller than the service delivery or duplicated counted. The latter counts the same child for each service needed and is, therefore, necessarily higher than the prevalence or head count. This lack of distinction leads to the erroneous conclusions drawn by GAO (1981a, 1981b) and the inadequate response to these reports by ASHA (1981). It is also reflected in Healey et al. (1981), Leske (1981a, 1981b), and ASHA (1977).

As an added dimension, it is preferable to use the term duplicated rather than service delivery count. Service delivery, in addition to its denotative meaning, connotes the necessary components associated with it. These components include the served, unserved, and underserved. These dimensions are often unspecified. One exception is DesRoches (1976). This represents the major objection to the utilization of service delivery data as the basis of prevalence estimates. On the other hand, given a data structure which considers and coalesces the three components, the service delivery prevalence is the most ideal.

Service delivery has an associated problem involving the data systems. Ludlow, Healey, and Glassman (1977a, 1977b) and Healey et al. (1981) indicated that children enrolled in therapy do not reflect accurately prevalence estimates.

This assertion is accurate only to the extent that they do not include data on preschool and adult populations.

With the enactment of Public Laws 94-142 and 89-313, Massachusetts' Chapter 766 Law, and others like it, greater emphasis has been placed on the identification and the service delivery for the unidentified and underserved populations. Accountability now includes the served, unserved, and the underserved. This fact can be seen in DesRoches (1976) and Stewart and Spells (1982). Thus, by law, the data systems (potentially) are more reflective of prevalence.

Ludlow et al. (1977a, 1977b) did not discuss this issue. Healey et al. (1981) did not consider this fact when they stated: "The systems required for the acquisition of more valid and reliable prevalence data simply have not been implemented in spite of the fact that the knowledge and technology exist" (p.1). This assertion is accurate since Healey et al. (1981) did not consider the data gathered by DesRoches (1976) and the possible congruence between prevalence and service delivery; that is, they can be the same.

The second major area in consideration of dimensionality is the definition of communicative disorders. Historically, the formal definitions of the various disorders were initiated in 1978, proposed in 1980, and adopted in 1981 by The American Speech-Language-Hearing Association (ASHA, 1982b). This recent adoption was significant in light of the projects implemented by Jones and Healey (1973, 1975). They considered the problem and its impact on data systems in their work. The further delineation of language (ASHA, 1983) and language disorders as it emanated from ASHA's Committee on Language (ASHA, 1982a) is unclear relative to their current formal definitions (ASHA, 1982b). Subsequently, Brown (1983) considered the definition of language shortsighted because the notion or concept of style was not included.

Prior to this, no one set of acceptable definitions was available. In addition to this lack of uniformity, there was no separation of language from speech disorders. For example, Public Laws 94-142, 89-313, and 91-230, subsumed language disorders under speech disorders. Other sources which reflected this inadequacy were NCHS (1981), GAO (1981a, 1981b), and OSERS (1980). Of late, the Head Start Bureau (1983, 1981) governed under P.L. 91-230, used both

speech impairment and communication disorders as the speech disorder category. This appeared to connote and to denote more than speech disorders. To a large extent this factor caused the lack of data on language disorders. In discussing the prevalence and incidence of communicative disorders, this fact was overlooked by Leske (1981a, 1981b) and Fein (1983a). It was interpreted earlier by Dublinske and Healey (1978) and considered by Healey et al. (1981).

In further consideration of dimensionality, the third variable is prevalence estimates based upon types of evaluation. This includes screenings versus full, diagnostic evaluations. The latter type is rare and preferable relative to the former because screenings are prone to false positives. Studies that include and/or contrast them are Haller and Thompson (1975); Fay et al. (1970); and Melnick, Eagles, and Levine (1964) and Head Start Bureau (1983, 1981, 1980, 1979, 1978, 1977). Thus, dimensionality, as defined above, with the three other variables outlined, accounts for the disparate results found in the literature. In short, orientation and contribution of each variable must be considered before valid and reliable prevalence estimates can be outlined.

This issue is one side of another problem. The previous discussion indicates that full, diagnostic evaluations are preferred over screenings as an examination protocol. On the other side, both diagnostic and screening examinations are preferred over interviews. For example, both the National Health Interview Survey (NHIS) and Health Examination Surveys (NHES) have weaknesses, and therefore, are weak indicators of prevalence and incidence of communicative disorders. Without question the NHES are the between data sources. To date, however, only current examination data are available on adults for hearing (NCHS, 1980). Speech and language examinations are not included in the protocols. This weakness forces reliance on the NHIS, which has serious inherent problems. Some of these problems can be found or contrasted in Fein (1983a) and Punch (1983a, 1983b). In addition, it would be helpful if these surveys were correlated, even though they have weaknesses. For example, the Survey of Income and Education (SIE) by the U.S. Bureau of the Census (1976) reveals an overlap on multiple handicaps totaling 14.6%. This overlap precludes the determination of primary versus related handicaps. Although designed for a different purpose, this survey contradicts the primary diagnoses concept under P.L. 94-142. The data contained in the survey are more useful and meaningful than in the survey by Punch (1983c).

The second rationale for this paper involves the availability of valid and reliable data. Unlike Leske (1981a, 1981b), ASHA (1977), and Healey et al. (1981—representing one of ASHA's more current positions), some current, available prevalence estimates are valid and reliable. A representative, selected set of this data include Head Start Bureau (1984, 1983, 1981, 1980, 1979, 1978, 1977), Stewart (1981), Stewart, Martin, and Brady (1979), DesRoches (1976), Beck et al. (1981), and NCHS (1980).

These data may or may not be representative of the general population and, therefore, may be generalizable. They are germane, however, to the specific population under study. Leske (1981a) and Fein (1983a) make this point with specific reference to age. Their point is that validity and reliability are separate but associated concepts, much as language and speech are interactive. Generalization is a third element which is separate from, but interactive with validity and reliability. It is this element which should be questionable in the professional literature rather than validity and reliability.

The third rationale for this paper is to correct the erroneous assertions, by Leske (1981a, 1981b), ASHA (1977), and Healey et al. (1981), about the availability of current, reliable, and valid prevalence estimates. These studies, with specific positions on prevalence estimates, have two problems: the misleading notions, in and of themselves, and the unawareness of data, which set, at least, upper limits on prevalence estimates. Taken together, the several sources are incorrect technically. There is far more known about the prevalence of communicative disorders than they suggest. To a great extent, their shortcomings lie in their oversight of resources which make major contributions in this area, and in their lack of depth reviewing and orienting studies on prevalence estimates, along with their implication. Even more recently, Fein (1983a, 1983b, 1983c, 1983d) and Punch (1983a, 1983b, 1983c) have some of the same inherent weaknesses as the earlier, more influential citations, mentioned above.

Although Healey et al. state that their "report presents a comprehensive review and critique of the literature. . ." (p1), there are several major areas not covered or mentioned which are informative, instructive, and valuable. First, a major resource area which is totally ignored are the medical or health-care facilities. This area includes such studies as Stewart et al. (1979), Haller and Thompson (1975), Sigel (1975), and others. The oversight may appear to be caused by their concern for national and/or federal sources of data. Their review of literature, however, and purpose counterindicate this point. The national perspective is clearly the intent in Leske (1981a, 1981b). The second area neglected is the scope of communicative disorders from a worldwide perspective. Currently, the dominant, available resource is Taylor (1980). Based on her erroneous assertions, Leske (1981b) moved in this direction. The third area involves studies on the prevalence of communicative disorders among minorities. These studies include NCHS (1980), Taylor (1980), Stewart et al. (1979), Stewart (1981), Stewart and Spells (1982), Haller and Thompson (1975), and Fay et al. (1970). Fourth, and contrary to Healey et al. (1981), data are available on preschool children (Head Start Bureau, 1984, 1983, 1981, 1980, 1979, 1978, 1977).

These four major areas were overlooked in the development of current thinking on the prevalence of communicative disorders. They represented important challenges to the understanding of prevalence estimates.

This paper presented some resources and issues which were overlooked in the development of current thinking on the prevalence of communicative disorders. The overlooked resources are important because they represent counterpoints to the assertions found in the studies of Healey et al. (1981), Leske (1981a, 1981b), and ASHA (1977).

These major, influential investigations contradicted, in principle, the official 10% prevalence estimates reflected in ASHA (1980) and the Panel on Communicative Disorders (1980). Without the overlooked studies, all of the previous references are misleading, if not inaccurate. The misleading or inaccurate assertions stem from their lack of dimensionality. In general, each of these studies had the same fundamental weaknesses. First, they confused generalization or lack of it with reliability and validity, the latter more problematic than the former. Second, they failed to orient the existing data for reassessment. The present study asserted (a) its disagreement with current thinking on the prevalence of communicative disorders; (b) that major topical areas have been overlooked; (c) that reliable and valid data are available, and (d) that prevalence data are not in disarray, but are not straightforward either.

References

- American Speech and Hearing Association. (1977).
Speech Pathology & Audiology: Manpower Resources & Needs. Bethesda (MD): National Institute of Neurological and Communicative Disorders and Stroke (NIH).
- American Speech-Language-Hearing Association. (1980).
Joint resolution. *ASHA*, **22**, Front cover.
- American Speech-Language-Hearing Association. (1981, July).
Serving Speech Impaired Children Under P.L. 94-142: Response of the American Speech-Language-Hearing Association to the United States General Accounting Office Report. Rockville (MD): American Speech-Language-Hearing Association, Governmental Affairs Review Supplement.
- American Speech-Language-Hearing Association. (1982a).
Committee on Language Proposed Definition of Language. *ASHA*, **24**, 143.
- American Speech-Language-Hearing Association. (1982b).
Definitions Communicative Disorders and Variations. *ASHA*, **24**, 949-950.
- American Speech-Language-Hearing Association. (1982a).
Committee on Language Definition of Language. *ASHA*, **25**, 44.
- Beck, S., Brook, R.H., Lohr, K.N., & Goldberg, G.A. (1981).
"Conceptualization and Measurement of Physiologic Health for Adults," Volume 14: Hearing loss. Santa Monica (CA): Rand Corp.
- Bensberg, G.J., & Sigelman, C.K. Definitions and prevalence.
In L.L. Lloyd (Ed.), **Communication Assessment and Intervention Strategies.** Baltimore: University Park Press, 1976.
- Brown, C. (1983).
"Comments on Definitions" (Letter to the Editor). *ASHA*, **25**, 5.
- Bureau of the Census. (1976).
Source Survey of Income and Education. Washington, D.C.: U.S. Department of Commerce, Population Division.
- DesRoches, C.P. (1976).
"Speech Therapy Services In A Large School System: A Six-Year Overview." *Language, Speech, Hearing Services Schools*, **7**, 207-219.
- Dublinske, S., & Healey, W.C. (1978).
P.L. 94-142: "Questions and Answers for the Speech-Language Pathologist and Audiologist." *ASHA*, **20**, 188-205.
- Fay, T.H., Hochberg, I., Smith, C.R., Rees, N.S., & Halpern, H. (1970).
"Audiologic and Otologic Screening of Disadvantaged Children." *Archives Otolaryngology*, **91**, 366-370.

- Fein, D.J. (1983a).
The Prevalence of Speech and Language Impairments. *ASHA*. 25(2) 37.
- Fein, D.J. (1983b).
Population Data From the U.S. Census Bureau. *ASHA*. 25(3) 47.
- Fein, D.J. (1981c).
Factors Related to State Service Levels. *ASHA*. 25(7) 31.
- Fein, D.J. (1983d).
Projections of Speech and Hearing Impairments to 2050. *ASHA*. 25(11) 31.
- Fein, D.J. & Snyder, N.O. (1983, May).
Final Report Alternative Estimates of the Supply of Speech-Language-Hearing Personnel. Rockville (MD): American Speech-Language-Hearing Association.
- General Accounting Office. (1981a, February 5).
Unanswered Questions on Educating Handicapped Children in Local Public Schools (HRD-81-43). Gaithersburg (MD): Document Handling & Information Services Facility.
- General Accounting Office. (1981b, September 30).
Disparities Still Exist in Who Gets Special Education (IPE-81-1). Gaithersburg (MD): Document Handling & Information Services Facility.
- Haller, R.M., & Thompson, E.A. (1975).
Prevalence of Speech, Language, and Hearing Disorders Among Harlem Children. *J. National Medical Association*, 67, 298-301, 325.
- Head Start Bureau. (1984, 1983, 1981, 1980, 1979, 1978, 1977).
The Status of Handicapped Children in Head Start Programs Fourth Through Ninth Annual Reports of the U.S. Department of Health and Human Services to the Congress of the United States on Services Provided to Handicapped Children in Project Head Start. Washington, D.C.: U.S. Office of Human Development Services, Administration for Children, Youth and Families.
- Healey, W.C., Ackerman, B.L. Chappell, C.R., Perrin, K.L., & Stormer, J. (1981). **The Prevalence of Communicative Disorders: A Review of the Literature.** Rockville (MD): American Speech-Language-Hearing Association.
- Helmick, J.W. (1976).
Effects of Therapy on Articulation Skills in Elementary-School Children. *Language, Speech, Hearing Services Schools*, 7, 169-172.
- Hull, F.M., Mielke, P.W., Willeford, J.A., & Timmons, R.J. (1976).
National Speech and Hearing Survey: Final Report. Project No. 50978 Grant No. OE-32-15-0050-5010 (607). Washington, D.C.: U.S. Office of Education, Bureau of Education for the Handicapped. (ERIC Document Reproduction Service, No. 129045).
- Jones, S.A., & Healey, W.C. (1973).
Project Upgrade: Model Regulations for School Language, Speech, and Hearing Programs and Services. Washington, D.C.: American Speech and Hearing Association.
- Jones, S.A., & Healey, W.C. (1973).
Project Upgrade: Guidelines for Evaluating State Education Laws and Regulations. Washington, D.C.: American Speech and Hearing Association.
- Leske, M.C. (1981a).
Prevalence Estimates of Communicative Disorders in the U.S. *Speech Disorders*. *ASHA*. 23, 217-225.
- Leske, M.C. (1981b).
Prevalence Estimates of Communicative Disorders in the U.S. *Language, Hearing and Vestibular Disorders*. *ASHA*. 23, 229-237.

- Ludlow, C.L., Healey, W.C., & Glassman, L. (1977).
National Evaluation of Education District Services I: A Review of Current Data Systems. *ASHA*, 19(5) 330-337.
- Massachusetts, Commonwealth of (1972).
Special Education Chapter 766 Law.
- Ludlow, C.L., Healey, W.C., & Glassman, L. (1977a).
National Evaluation of Education District Services I: A Review of Current Data Systems. *ASHA*, 19(5) 330-337.
- Ludlow, C.L., Healey, W.C., & Glassman, L. (1977b).
National Evaluation of Education District Services II: A Plan for Designing Data Systems. *ASHA*, 19(6) 411-416.
- McConnell, F., & Liff, S. (1975).
The Rationale for Early Identification and Intervention. *Otolaryngologic Clinics North America*, 8, 77-87.
- McDermott, L.D. (1981).
The Effect of Duplicated and Unduplicated Child Count on Prevalence of Speech-impaired Children. *Language, Speech, Hearing Services Schools*, 12, 115-119.
- Melnick, W., Eagles, E.L., & Levine, H.S. (1964).
Evaluation of a Recommended Program of Identification Audiometry with School-age Children. *J. Speech Hearing Disorders*, 29, 3-13.
- National Center for Health Statistics. (1980).
Basic Data on Hearing Levels of Adults 25-74 Years: United States 1971-75 (Series 11, No. 215 U.S. Public Health Service). Rockville (MD): Health Resources Administration.
- Office of Special Education and Rehabilitative Services. (1980).
"To Assure the Free Appropriate Public Education of All Handicapped Children." Public Law 94-142, Section 618—Second Annual Report to Congress on the Implementation of Public Law 94-142: The Education for All Handicapped Children Act. Washington, D.C.: U.S. Department of Education.
- Panel on Communicative Disorders. (1980).
Report of the Panel on Communicative Disorders to the National Advisory Neurological and Communicative Disorders and Stroke Council [Publication No. (NIH) 81-1914]. Washington, D.C.: U.S. Department of Health and Human Services.
- Public Law 89-313. (1965, November 1).
An Amendment to Title I of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 236 et seq.). Washington, D.C.: U.S. Congress.
- Public Law 91-230. (1970, April 13).
Education of the Handicapped Act of 1970 (20 U.S.C. 1401 et seq.). Washington, D.C.: U.S. Congress. (84 Stat. 121).
- Public Law 94-142. (1975, November 29).
The Education for All Handicapped Children Act (20 U.S.C. 1401 et seq.). Washington, D.C.: U.S. Congress. (89 Stat. 773).
- Punch, J. (1983a).
The Prevalence of Hearing Impairment. *ASHA*, 25(4), 27.
- Punch, J. (1983b).
The Geographic Distribution of Speech-Language-Hearing Personnel. 25(5), 31.
- Punch, J. (1983c).
Sociodemographic and Health Characteristics of the Hearing-Impaired Population. *ASHA*, 25(8), 15.
- Sax, M.R. (1972).
A Longitudinal Study of Articulation Change. *Language, Speech, Hearing Services Schools*, 3, 43-48.

- Siegel, B. (1975).
A Racial Comparison of Cleft Patients in a Clinic Population: Associated Anomalies and Recurrence Rates. **Cleft Palate J.**, 16, 193-197.
- Stewart, J.M. (1981).
Multidimensional Scaling Analysis of Communicative Disorders by Race and Sex in a Midsouth Public School System. **J. Communication Disorders**, 14, 467-483.
- Stewart, J.M., Martin, M.E., & Brady, G.M. (1979).
Communicative Disorders at a Health-Care Center. **J. Communication Disorders**, 12, 349-359.
- Stewart, J.M., & Spells, V.R. (1982).
Current Trends of Communicative Disorders in a Public School System. **Australian J. Human Communication Disorders**, 10, 33-57.
- Taylor, O.L. (1980).
Communication Disorders in Blacks. In B.E. Williams & O.L. Taylor (Eds.), **International Conference on Black Communication A Bellagio Conference August 6-9, 1979**. New York: Rockefeller Foundation.
- Wilber, L.A. (1982).
An Open Letter to the White House, Congress, Executive Department and Agency Officials.

