Children With Attention Deficit Disorder and Learning Disability: Findings From the First National Study

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ABSTRACT

The first National Health Interview Survey to collect data on children, 6 to 11 years of age, with attention deficit disorder (ADD) and/or learning disability (LD) provided specific information on: (1) the widespread demographic distribution of children with ADD and LD, (2) related health conditions, (3) use of special education programs, and (4) the extensive use of health care services. The underlying reality was the increasing need for information because dental practitioners provide services to many of these children in their communities. (*J Dent Child.* 2004;71:101-104)

KEYWORDS: ADD, LEARNING DISABILITY, DEMOGRAPHICS

"In the last 30 years, the diagnosis and treatment of behavioral and learning disorders have become major health concerns for school children in the United States.¹"

The increase in prevalence of behavioral and learning problems in school-aged children has been linked to changes occurring in families, schools, and medical practices. In families, marital instability, inadequate daycare, and poverty have adversely affected children's lives and contribute to the rise in problems.¹⁻³ In the late 1990s more than 2.6 million children 6 to 11 years of age were reported to have had either a diagnosis of attention deficit disorder (ADD) or learning disability (LD). Three percent of children 6 to 11 years of age had been diagnosed with ADD, 4% with LD, and 4% with both conditions.¹

ADD is a neurobehavioral syndrome described by significant levels of inattention, impulsive and/or overactivity. Learning problems, poor peer relations, and low self-esteem frequently also are reported. ADD continues into adolescence and adulthood for a substantial number of individuals, ranging between 25% and 50% for conduct disorder and as high as 70% for deficit inattention and/or activity level.⁴⁻⁶ LD is a disorder in 1 or more of the basic psychological processes involved in understanding or using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.⁷

The good news is that dentists can help children with ADD and LD by identifying the disorders as early as possible and establishing a proper treatment regimen.

Previous articles in the Journal of Dentistry for Children reported (1) the general summary estimates of prevalence of ADD and LD in the national population, (2) casual factors, (3) deinstitutionalization and mainstreaming of many children with complicating developmental and psychological disorders, and (4) particular emphasis on the behavioral management of these children in the practice setting.⁸⁻¹¹ Recently published information from the first National Health Interview Survey (NHIS) on these 2 major behavioral and learning disorders provided a far more detailed view of the distribution of preteen school age children with ADD and/or LD.1 The following review of this extended report emphasized (1) the widespread demographic distribution of youngsters with ADD and LD, (2) related health conditions, (3) use of special education programs, and (4) the extensive use of health care services. The underlying reality is that dentists provide oral health services to many of these children in their communities.

SURVEY PROCEDURES

More than 78,000 households, including data for 8,647 children, participated in the NHIS. The response rate for

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the child section of the NHIS was more than 80%. In more than 90% of the families a parent was the respondent who provided information about the child.

PREVALENCE

Among children 6 to 11 years of age, 7% were reported to have a diagnosis of ADD and approximately 8% were reported to have a diagnosis of LD. The report showed the following prevalence rates:

- 1. The diagnosis of ADD and/ or LD was higher among children 9 to 11 years of age than among those 6 to 8 years of age, which was possibly associated with continued opportunities for review and examination in a structured school setting.
- 2. ADD was almost 3 times greater in boys than girls.
- 3. The combination of both ADD and LD was 2 times greater in boys than girls.
- 4. There was no significant difference between boys and girls in prevalence rates for LD.

RACE AND ETHNICITY

The effect of race and ethnicity varied by diagnostic category.

- 1. White nonHispanic children were more often diagnosed with ADD than black nonHispanic or Hispanic children.
- 2. Racial and ethnic differences in the percent of all children with LD or both ADD and LD were not statistically significant.

SOCIODEMOGRAPHICS

The effect of sociodemographic characteristics similarly varied among the diagnostic categories.

- 1. Low birth weight was related to having a diagnosis of LD.
- 2. Living in a mother-only or low-income family was linked to having LD and having the combination of both ADD and LD, but not to ADD alone.
- 3. Having either private or public health insurance was associated with a diagnosis of ADD.
- Neither ADD nor LD was related to living in a metropolitan area (Table 1).

Table 1. Number and Percent of Children (6–11 years) With Attention Deficit Disorder (ADD) and/or Learning Disability (LD) by Selected Characteristics: 1997–98'

	Number (in 1,000)			Percent of children			
Characteristic	ADD/noLD	LD/noADD	Both	ADD/noLD	LD/noADD	Both	
Total	784	1,010	839	3(%)	4(%)	4(%)	
Gender							
Boys	582	576	597	5	5	5	
Girls	203	434	242	2	4	2	
Race/Ethnicity							
White non-Hispanic	649	621	575	4	4	4	
Black nonHispanic	69	201	153	2	5	4	
Hispanic	48	165	93	1	5	3	
Birthweight							
Low (<2,500 g)	65	134	75	4	9	5	
Not low	680	819	697	3	4	3	
Family structure							
Mother & father	525	609	514	3	4	3	
Mother only	203	325	242	4	6	5	
Family income							
\$20,000+	606	661	532	3	4	3	
< \$20,000	143	302	287	3	4	3	
Residence in MSA*							
Central city	190	294	208	3	5	3	
Not central city	442	493	418	4	4	3	
Not MSA	153	223	214	3	5	4	
Health insurance coverage							
Uninsured	58	142	75	2	5	2	
Medicaid	158	304	295	4	8	8	
Private [†]	566	562	461	3	3	3	

Note: The term "Both" refers to children who have been diagnosed with ADD and LD. *Metropolitan Statistical Area

includes children covered by private insurance, those with nonMedicaid public insurance, and those with both private and public insurance.

OTHER HEALTH CONDITIONS

MENTAL RETARDATION

Among children with neither ADD nor LD, 1% were reported to have mental retardation or other development delays. By contrast:

- 1. 31% of children with LD were reported to have mental retardation.
- 2. 34% of children with both ADD and LD were reported to have mental retardation. Among children with ADD, the percent with mental retardation or other developmental delays could not be estimated precisely, but the number in the sample was small.

Table 2. Percent of Children (6–11 years) With Selected Health Conditions by Attention Deficit Disorder (ADD) and/ or Learning Disability (LD) and Gender: 1997–98'

Health condition disorders	Neither*	ADD/noLD	LD/noADD	Both
Boys				
Mental retardation	2	Ť	30	35
Hearing or vision	3	Ť	11	8
Allergies	28	32	37	39
Asthma	15	19	18	20
Other conditions‡	4	t	9	11
Girls				
Mental retardation	1	Ť	31	34
Hearing or vision	3	Ť	14	
Allergies‡	26	32	34	40
Asthma	9	t	15	
Other conditions§	4	ŧ	11	t

*Includes children who have never had a diagnosis of ADD or LD. †Figure does not meet standard of reliability or precision. ‡Includes digestive allergies, skin allergies, hay fever, respiratory allergies or frequent ear infections during the last 12 months. §Includes cerebral palsy, muscular dystrophy, cystic fibrosis, sickle cell anemia, diabetes, arthritis, or heart disease, as well as reports of frequent diarrhea or colitis, anemia or seizures during the past 12 months.

OTHER HEALTH PROBLEMS

Impaired vision and hearing, allergies and chronic health conditions (other than asthma) were reported more frequently among children with LD than those with no reports of ADD or LD. For example, among:

- children with LD, the percent reported to have other chronic health conditions was over twice that of children with neither ADD nor LD;
- 2. children with the combination of ADD and LD, the percent with chronic conditions was 3 times that of children with no report of either ADD or LD (Table 2).

USE OF SPECIAL EDUCATION

Over 54% of children with the diagnosis of LD were in special education programs. This was almost 5 times greater than the percent observed for children with ADD and over 23 times the percent reported for children with neither diagnosis.¹

USE OF HEALTH CARE SERVICES

MENTAL HEALTH PROFESSIONALS

Among children with neither ADD nor LD, only 3% had contact with a mental health professional during the previous 12 months. By contrast, children having contact with a mental health professional ranged from 17% for those with LD to 34% for those with ADD and 51% for children with both diagnoses.

MEDICAL SPECIALISTS

The percent of children having contact with medical specialists was greater for those with either a diagnosis of ADD or LD than for children with neither diagnosis.

MEDICATION

Among children with neither ADD nor LD, only 6% used prescription medication on a regular basis. By contrast:

- 1. 14% of children with LD used medication on a regular basis.
- 2. 54% of children with ADD used medication on a regular basis.
- 3. 61% of children with both ADD and LD used medication on a regular basis.

THE CHALLENGE

The consequences of ADD and LD for children, their families, and society are considerable.¹²⁻¹⁴

"For children, these conditions interfere with academic achievement and social development. For families, these conditions require diagnostic and treatment services that are often not covered by health insurance... For society (these) disorders create substantial demands on institutions and individuals providing health care and educational services."¹

The findings from this first national study indicated a relationship among ADD, being white, nonHispanic, and having health insurance coverage. By contrast, having a diagnosis of LD was linked to being a child in a low-income family or mother-only family. If, as most data suggest, barriers to diagnosis and treatment are greater in the health care system than in the educational system,¹ it is not surprising that:

- 1. Health insurance coverage and being a white nonHispanic child was associated with ADD, a condition often diagnosed by health care providers.
- 2. Low-income or mother-only families were associated with LD, a condition frequently identified by school personnel.¹²

This seemingly endless litany of percentages and relationships takes on special meaning when it is considered in terms of the potential impact on dental practitioners, including increased:

- 1. number of children with ADD and/or LD in their communities;
- probability of children with other medical conditions, including mental retardation and other developmental delays, problems of vision and hearing, allergies, and asthma;
- 3. probability of behavioral management difficulties;
- 4. probability of the use of prescription medication by young patients;
- 5. Need for coordination with other health and education professionals.

The appended terminology of ADD and LD may at first be applied by school educators and physicians to describe the limitations encountered in the classroom setting. But these same limitations are the realities that challenge the dentist in the delivery of needed oral health services. An increased availability of information about children with ADD and LD is essential if dentists are to provide care for those who live in their communities. Indeed, these children may well be members of the families they currently treat in their practices.

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