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U.S. Children with Emotional and Behavioral Difficulties: Data from the 2001, 2002, and 2003 National Health Interview Surveys

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Abstract

Objective—This report presents selected prevalence estimates for children ages 4–17 years with difficulties in emotions, concentration, behavior, or being able to get along with others using data from the 2001, 2002, and 2003 National Health Interview Surveys (NHIS).

Methods—Data for the U.S. civilian noninstitutionalized population were collected using computer-assisted personal interviews (CAPI). In 2001, a total of 10,367 interviews were completed about sample children ages 4–17 years by the member of the household most knowledgeable about the child's health. The number of completed interviews about sample children ages 4–17 years was 9,512 in 2002 and 9,399 in 2003. Questions on children's emotional and behavioral difficulties from the Strengths and Difficulties Questionnaire (SDQ) were first asked in the NHIS in 2001. SUDAAN software was used to tabulate statistics shown in this report.

Results—In 2001, 2002, and 2003, approximately 5% of U.S. children ages 4–17 years had emotional or behavioral difficulties, and for approximately 80% of these children, there was an impact on their functioning. Children with difficulties in emotions, concentration, behavior, or being able to get along with others varied by sex, age, race, family structure, poverty status, and health insurance status. About 50% of these children were upset or distressed by their emotional or behavioral difficulties, and about 80% had difficulties that impacted their family life, friendships, learning, or leisure activities.

keywords: children's mental health • mental health services • Strengths and Difficulties Questionnaire (SDQ) • quality of life • mental health impairment • children with special needs

Introduction

Emotional and behavioral disorders among children have considerable social and economic consequences for families and society (1). Children's mental health disorders may impact family finances and relationships, including placing parents or caregivers at risk of psychological distress (2–4). Children with mental health disorders often need educational accommodations and services. Among school-aged children receiving services through the Individuals with Disabilities Education Act, 8.6% qualified because of "emotional disturbance (5)." In the 2000–2001 school year, the average cost for special services was $12,639 per student (6). The U.S. Surgeon General recognized the potential for an emerging crisis, and called for improved surveillance of children's mental health (7,8).

In response to this need for data on children's mental health, the National Institute of Mental Health (NIMH) worked with the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), to expand coverage of mental health topics in the National Health Interview Survey (NHIS). In 2001 and 2003, the NHIS included the Strengths and Difficulties Questionnaire (SDQ) for children ages 4–17 years. A subset of these questions was also included in the 2002 NHIS. This report uses questions from the SDQ and highlights estimates of the percentage of children with

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difficulties in emotions, concentration, behavior, or getting along with others. Data for 3 years are examined individually in order to detect any patterns or changes over the 3-year period.

History of children's mental health questions in the National Health Interview Survey

The NHIS, an annual household survey with a nationally representative sample, is one of the major data collection systems of NCHS. In the NHIS a respondent in the household familiar with the child's health, usually a parent, is interviewed about the child's health. The NHIS interview covers a wide range of health topics, so the time allotted to children's mental health must be limited. Some data are collected annually on mental health conditions—including whether a child has autism, Attention-Deficit Hyperactivity Disorder, and limitations due to emotional and behavioral problems.

Past efforts to collect additional data about children's mental health in the NHIS have included the use of an abbreviated form of the Child Behavior Checklist (CBCL) in 1988 (9) and 1997–2000 (10) and general questions on developmental delay in the 1988 NHIS Child Health Supplement (11). The 1994–95 NHIS Disability Survey also included useful questions on functional developmental delay for infants and young children (12,13). However, for school-aged children, the abbreviated forms of the CBCL lacked validation studies (10) and the general developmental delay questions were too broad to ascertain the state of children's current mental health.

The Strengths and Difficulties Questionnaire

A panel of mental health experts in child epidemiologic research recommended replacing the abbreviated forms of the CBCL with the Strengths and Difficulties Questionnaire (SDQ). There were several reasons the SDQ was chosen for use in the NHIS. The SDQ, developed and copyrighted by Dr. Robert Goodman (14,15), is relatively short and can be asked in 4 to 5 minutes. The SDQ consists of approximately 30 questions that ascertain psychological symptoms or difficulties, duration of the symptoms, and the impact of these difficulties for children ages 4–17 years. The impact questions cover areas of the child's life such as learning and family life. The SDQ can be administered to an adult, usually parents or caregivers; thus, an interview with the child is not required. Children are not used as respondents in the NHIS. Parents favored the SDQ over similar measures because it includes positive questions (16). The SDQ has been widely used internationally to identify children with mental health problems (17–22). Thus, international comparisons may be possible.

Studies of British children and adolescents have shown that the SDQ discriminated between children who had a psychiatric diagnosis and children from the general community (15,23,24). A study in Australia comparing independent diagnoses of children made by clinicians to diagnoses based on the SDQ found significant correlations between the SDQ diagnoses and the clinician diagnoses (25). When the SDQ was recommended by the NIMH panel for inclusion in the NHIS, the SDQ had not been used in the United States. Its acceptability to American parents was largely unknown. Therefore, the questions were tested in the NCHS Questionnaire Design Research Laboratory before including the SDQ in the NHIS. To determine if parents understood the wording and questions on the SDQ, cognitive psychologists conducted approximately 30 interviews using the SDQ with two selected groups of parents: parents representing a wide range of socioeconomic backgrounds, and parents whose children had a mental health diagnosis. As a result of this testing, minor wording changes were made in consultation with Dr. Goodman to ''Americanize'' some terms in the SDQ, and Dr. Goodman granted permission for NCHS to use the modified SDQ language in the NHIS.

This report focuses on NHIS data from one section of the SDQ. After a series of questions on the positive and negative behaviors of children, the respondent most knowledgeable about the child's health, usually the parent, was asked, *"Overall do you think that (child's name) has difficulty in any of the following areas: emotions, concentration, behavior, or being able to get along with others."* A card handed to respondents listed four response options: *no; yes, minor difficulties; yes, definite difficulties; yes, severe difficulties.* In a 3-year followup study of 2,500 British children, responses of ''definite'' or ''severe'' to this question were a predictor of DSM-IV diagnostic status and were significantly related to the use of mental health services (26). Examination of responses of ''definite'' or ''severe'' in the 2001 NHIS revealed a significant relationship between these responses and use or contact with mental health services (27).

Methods

Data source

The statistics in this report are based on data for children aged 4–17 years from the Sample Child File of the 2001, 2002, and 2003 National Health Interview Surveys (28–30). Interviews were completed for approximately 81% of eligible sampled children in all 3 years. The NHIS is an annual survey of a nationally representative sample of the civilian noninstitutionalized household population of the United States. Basic health and demographic information are collected on all household members from a knowledgeable household member. Additional information is collected on one randomly sampled adult aged 18 years and over and one randomly sampled child aged 0–17 years per family. Information on the sample child is collected from an adult who is knowledgeable about the child's health, usually a parent. The overall response rate for the NHIS was 87.6 in 2001, 88.1 in 2002, and 87.9 in 2003. Approximately 92% of the respondents for the sampled child were the child's parents. For the purpose of conciseness in the text and tables of this report, parents and knowledgeable adult respondents will be referred to by the term ''parent.''

Supplements on special topics are periodically added to the NHIS. The

2001 and 2003 NHIS included the SDQ as a special supplement in the Sample Child Component on children's mental health for children aged 4–17 years. The 2002 NHIS included a subset of questions from the SDQ. Detailed information about the design of the NHIS is available elsewhere (31).

Questions on children's mental health

The primary focus of this report is on a single overall question in the SDQ that ascertains whether children have *"difficulty in any of the following areas: emotions, concentration, behavior, or being able to get along with others."* For the purpose of conciseness in the text and tables of this report, children have been classified as having "difficulties" if the parent reported either definite or severe difficulties.

In the 2001 and 2003 NHIS, parents reporting difficulties were then asked how long the difficulties have been present. If the child had difficulties for at least 1 month or more, the parent was then asked five additional questions that are part of the SDQ. The first question explored the extent to which the difficulties upset or distress the child, and the remaining four questions explore the extent to which the difficulties interfere with the child's everyday life in home life, friendships, classroom learning, or leisure activities. To each of these five questions, parents could respond with *"not at all," "only a little," "quite a lot," or "a great deal."*

Statistical analysis

This report is based on interviews with parents or knowledgeable adults about the sample child's emotional and behavioral difficulties in the 2001, 2002, and 2003 NHIS for children aged 4–17 years. The number of children aged 4–17 years in the NHIS samples was 10,367 in 2001; 9,512 in 2002; and 9,399 in 2003.

All estimates and associated standard errors in this report were generated using SUDAAN, a software package designed to handle the complex sample design used by the NHIS (32). All estimates were weighted to reflect the U.S. civilian noninstitutionalized population aged 4–17 years. Estimates with a relative standard error of more than 30% are considered unreliable and are identified with an asterisk. Estimates shown in this report were calculated excluding unknowns. Responses of "refused," "not ascertained," or "don't know" were excluded from the denominator. Estimates were compared using two-tailed *t*-tests at the 0.05 level. Terms such as "greater than" and "less than" indicate a statistically significant difference. Terms such as "similar" or "no difference" indicate that the statistics being compared were not statistically significant. Lack of comment regarding the difference between any two statistics does not mean that the difference was tested and found to be not significant.

Results

Data in the tables are presented for the years 2001–03 and, in general, show consistent patterns for all 3 years. The results section will highlight data from the most recent year and mention notable differences from the earlier years. The percentage of children whose parents perceive them as having definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others by sociodemographic characteristics are shown in tables 1–3. Table 4 shows the utilization of selected health services for two groups of children: those whose parents perceive them as having a definite or severe difficulty in emotions, concentration, behavior, or being able to get along with others and those whose parents do not see their children as having a definite or severe difficulty in any of these areas. Figure 1 shows the percentage of children with a definite or severe difficulty where the difficulties have impacted the child's life. Highlights for tables 1–4 and figure 1 are presented in the following text:

Table 1

- In 2003, approximately 2.7 million (data not shown) or 4.8% of all children 4–17 years of age had definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others as indicated by their parent.
- The percentage of boys with difficulties was almost twice as high as the percentage of girls with difficulties (6.3% versus 3.3%).
- In 2003, parents indicated that younger children ages 4–7 years (3.3%) were less likely to have had difficulties than were older children ages 8–10 years (5.5%), 11–14 years (4.9%), or 15–17 years (6.1%).
- A smaller percentage of Hispanic children (3.7%) had difficulties than white non-Hispanic (5.2%) or black non-Hispanic children (5.5%) in 2003.
- Children living in single-mother families (7.0%) were more likely to have had difficulties than children living in two-parent families (4.0%).
- Level of mother's education did not affect the proportion of children with difficulties.
- Poverty was significantly related to whether or not children had difficulties. In 2003, children in poor families (7.8%) were more likely to have had difficulties than children in families that were not poor (4.6%).
- In 2003, children with Medicaid or other public health insurance coverage (8.7%) were approximately twice as likely to have had difficulties as were children with private health insurance (3.5%) or children with no health insurance coverage (5.2%).

Tables 2 and 3

- In 2003, there were no differences by age in the percentage of boys whose parents perceived them as having definite or severe difficulties with emotions, concentration, behavior, or being able to get along with others. In 2001 and 2002, parents indicated that older boys ages 8–10 years (8.2% and 8.0%, respectively) and 11–14 years (7.4% and 10.0%, respectively) were twice as likely as younger boys ages 4–7 years to have had difficulties (3.8% and 4.3%, respectively).
- In 2003, there were significant differences by age in the percentage of girls with difficulties. Parents indicated that older girls ages 15–17 years (5.1%) were almost three times

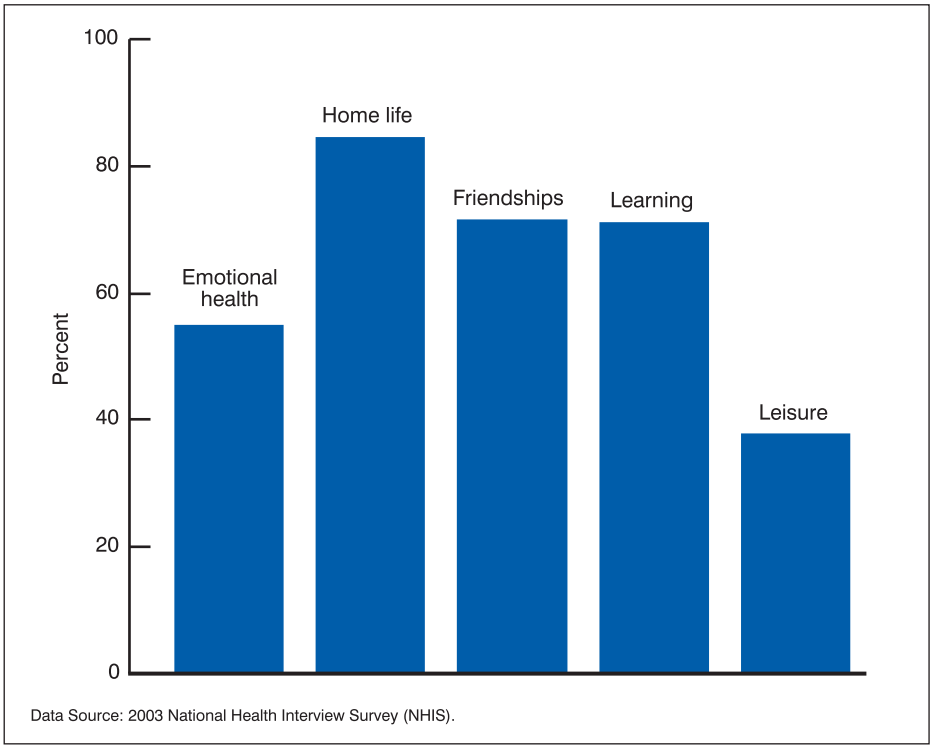

Figure 1. Percent of children ages 4–17 years who had definite or severe difficulties that interfered in their everyday life as reported by their parent: United States, 2003

as likely as younger girls ages 4–7 years (1.8%) to have had difficulties. In 2001, there were no differences by age in the percentage of girls with difficulties.

- In 2003, white non-Hispanic (6.6%) and black non-Hispanic boys (8.3%) were more likely to have had difficulties than were Hispanic boys (4.7%).
- For girls, there were no differences in the percentage with difficulties by race or ethnicity in 2003. In 2001 and 2002, white non-Hispanic girls (4.5% and 3.7%, respectively) were more likely to have had difficulties than were Hispanic girls (2.6% and 2.0%, respectively).
- Examination by family structure showed significant differences in the percentage of boys and the percentage of girls with difficulties. In 2003, boys (9.6%) and girls (4.7%) living in single-mother families were about twice as likely to have had difficulties as boys (5.4%) or girls (2.6%) living in two-parent families.
- Poverty was associated with boys having difficulties. In 2003, boys living in poor families were twice as likely to have had difficulties as boys living in families that were not poor (12.1% versus 6.1%).
- Poverty was not associated with girls having difficulties in 2003. In 2001 and 2002, however, girls living in poor families (6.7% and 8.4%, respectively) were about twice as likely to have had difficulties as girls living in families that were not poor (3.5% and 2.8%, respectively).
- Boys (11.4%) and girls (5.9%) with Medicaid or other public health insurance coverage were about twice as likely to have had difficulties as boys (4.6%) and girls (2.3%) with private health insurance coverage in 2003.

Table 4

- In 2003, children whose parents perceived them as having definite or severe difficulties with emotions, concentration, behavior, or being able to get along with others were at least 10 times more likely to use or contact mental health services as were children whose parents did not perceive them as having difficulties.
- Among children in 2003 who had difficulties, 39.2% had a contact or visit to a general doctor for an emotional or behavioral problem compared with 2.6% of children without difficulties indicated.
- In 2003 among children who had difficulties, 44.5% had contact with a mental health professional compared with 4.7% of children without difficulties indicated.
- Among children in 2003 who had difficulties, 22.7% received special education services compared with 1.1% of children without difficulties indicated.
- In 2003 among children who had difficulties, 9.3% needed mental health services, but could not afford them, compared with 0.5% of children without difficulties indicated.

Figure 1

- In 2003, 55% of the children described by their parents as having difficulties that lasted 1 month or longer were distressed by their difficulty.
- Most children with parent-reported difficulties that lasted 1 month or longer had difficulty with home life (84.6%).
- A majority of children with difficulties that lasted 1 month or longer had difficulty with friendships (71.6%).
- In 2003, 71.2% of children with difficulties that lasted 1 month or longer had difficulty with learning.
- More than one-third of children with difficulties that lasted 1 month or longer had difficulty with leisure activities (37.8%).

Discussion

Data from the NHIS indicate that approximately 2.7 million children ages 4–17 years (5% of the noninstitutionalized population of children in the United States) had definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others. This number is consistent with the findings of other researchers who report that the percentage of children with serious emotional and behavioral disorders ranged from 4% to 13% (33–37). Among children identified with definite or severe difficulties, four out of five

had difficulties that impacted some aspects of their life: home life, learning, friendships, or leisure activities. In addition, more than one-half of the children with difficulties were upset or distressed by them. These results are consistent with those of other researchers who examined the impact of children's mental health disorders on the quality of their lives and found that these children had difficulties functioning in their day to day lives beyond the symptoms that characterized their disorder (38,39).

Mental health services are expensive and may not be available to all who need them. The findings in this report indicated that 9% to 10% of children with definite or severe difficulties needed mental health services but were unable to afford them. In fact, for each of the 3 years examined in this report, only about 45% of children with definite or severe difficulties had contact with a mental health professional. The proportion of children receiving mental health services may even be lower because ''use'' or ''contact'' with a mental health service does not necessarily imply that the children received any of the services they needed. These data tell us that an effort has been made to obtain help for some of these children, but the degree of services or support the children received is unknown.

Sociodemographic differentials of children with emotional, cognitive, and behavioral difficulties presented in this report are similar to those found in other NHIS studies (11,34,37) and in the literature (33,35,36,40). The percentage of boys with difficulties was higher than the percentage of girls for each of the 3 years. The gender difference is sometimes attributed to boys having symptoms that are more easily observed, such as ''acting out'' behaviors. Girls, on the other hand, have higher rates of internalizing disorders that are more difficult to observe and diagnose (36). Compared with older children, children in the youngest age group, ages 4–7 years, were less likely to have difficulties. Some difficulties, such as difficulties in concentration and being able to get along with others, may not be noticed until children are further along in school.

The socioeconomic differentials reported here for children who had difficulties in emotions or behavior were similar to those found in other studies (33,35,37). Poor children and children with Medicaid coverage were more likely to have difficulties than other children. Circumstances surrounding poverty place children at increased risk of developing a mental health disorder (7, 41). Although this study shows the percentage of children with difficulties who lived with their ''mother only'' was twice as high as that of children who lived with two parents, Blum et al. found that when they controlled for income among children with mental health problems the difference by family structure diminished (42).

Limitations

The NHIS data used in this study provided nationally representative samples, but there are limitations to this study that should be noted. The data are cross-sectional and can not be used to infer causality. These data do not include children who may be institutionalized because of a mental disorder. In addition, although the SDQ questions have been validated in other countries, they have not yet been validated among U.S. children. Factor analysis of the 2001 NHIS SDQ data revealed that U.S. and European parents may differ in their perception of children's conduct and peer problems (43). Additional work is currently being done to test the validity of the SDQ in samples of U.S. children, including minority children.

The data used in this report were obtained from parents or another adult knowledgeable about the child's health. There are concerns about parent observations that should be noted. Parental distress or mental illness could bias a parent's observation (44). Also, parents may not observe symptoms of internalizing disorders, such as depression. When children become older and spend more time away from home, parents have less opportunity to observe some behaviors. Ethnic and cultural differences may also exist in how parents perceive their children and what they will say about them. Although these concerns merit consideration, it is important to note that parents have been shown to be significant observers of their children's symptoms (45,46) and research tools used in mental health evaluations often use parent observation (47). Dulcan et al. found that parents' observations about their children often resulted in their pediatrician noting psychiatric problems and making referrals (48).

Conclusion

The findings in this report indicate that 1 out of every 20 children has definite or severe difficulties in emotions, concentration behavior, or being able to get along with others, and these difficulties affect children's lives in important areas including home life, friendships, learning, and leisure activities. In addition, many of these children are upset or distressed by their difficulties. These children will need various services or support in order to achieve their potential and become contributing members of society. At least 1 out of 10 of these children will also need assistance paying for needed services. This report may be useful to educators, health planners, and health professionals involved in assessing needs for services for children with emotional or behavioral difficulties.

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Table 1. Percent (with standard error) of children ages 4–17 years whose parent perceived them as having definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others by selected characteristics: United States, 2001–2003

Selected characteristic	2001[1,2]	2002[1,2]	2003[1,2]
	Percent[3] (standard error)		
Total[4]	5.2 (0.26)	5.5 (0.30)	4.8 (0.26)
Sex			
Male	6.2 (0.38)	7.5 (0.47)	6.3 (0.46)
Female	4.1 (0.34)	3.5 (0.35)	3.3 (0.32)
Age			
4–7 years	3.6 (0.43)	3.2 (0.39)	3.3 (0.50)
8–10 years	5.9 (0.56)	5.9 (0.73)	5.5 (0.55)
11–14 years	6.0 (0.55)	6.8 (0.59)	4.9 (0.50)
15–17 years	5.2 (0.55)	6.5 (0.62)	6.1 (0.72)
Race/ethnicity[5]			
White, single race, not Hispanic	5.4 (0.34)	5.6 (0.38)	5.2 (0.37)
Black, single race, not Hispanic	5.7 (0.74)	8.5 (0.81)	5.5 (0.75)
Hispanic or Latino[6]	3.8 (0.36)	3.7 (0.44)	3.7 (0.49)
Family structure[7]			
Mother and father	4.0 (0.28)	4.2 (0.30)	4.0 (0.31)
Mother, no father	8.1 (0.69)	9.2 (0.81)	7.0 (0.63)
Father, no mother	5.0 (1.10)	5.4 (1.26)	3.6 (1.07)
Mother's education			
Less than high school diploma	5.7 (0.68)	6.1 (0.84)	4.9 (0.67)
High school diploma or GED[8]	4.5 (0.46)	6.2 (0.58)	4.7 (0.44)
More than high school	5.1 (0.36)	4.9 (0.41)	4.8 (0.39)
Poverty status[9]			
Poor	8.3 (0.97)	11.0 (1.23)	7.8 (1.05)
Near poor	7.1 (0.74)	7.1 (0.87)	6.1 (0.65)
Not poor	4.3 (0.29)	4.5 (0.36)	4.6 (0.43)
Health insurance coverage[10]			
Private	3.7 (0.26)	4.4 (0.34)	3.5 (0.32)
Medicaid[11]	10.3 (0.88)	8.9 (0.74)	8.7 (0.70)
Uninsured	4.9 (0.82)	5.3 (0.82)	5.2 (0.84)

[1]Child had definite or severe difficulties based on the question, ''Overall, do you think that (child's name) has a difficulty with emotions, concentration, behavior, or being able to get along with others?''

[2]In the tables and text of this report a parent or knowledgeable responding adult will be referred to by the term ''parent'' for purposes of conciseness.

[3]Unknowns for the column variables are not included in the denominators when calculating percents.

[4]Total includes children of other race/ethnicity, family structure, or health insurance coverage and with unknown family structure, education, poverty status, and health insurance coverage.

[5]In accordance with the 1997 Standards for Federal data on race and Hispanic or Latino origin, detailed information on single race and multiple-race combinations is collected in the NHIS. However, due to the small sample sizes associated with studying children with emotional and learning difficulties, only two single race categories are shown.

[6]Persons of Hispanic or Latino origin may be of any race or combination of races.

[7]Family structure refers to parents living in the household. ''Mother and father'' can include biological, adoptive, step, or foster relationships.

[8]GED is General Educational Development high school equivalency diploma.

[9]Poverty status is based on family income and family size using the U. S. Census Bureau's poverty thresholds for the previous calendar year. ''Poor'' persons are defined as below the poverty level. ''Near poor'' persons have incomes of 100 percent to less than 200 percent of the poverty threshold. ''Not poor'' persons have incomes that are 200 percent of the poverty threshold or greater.

[10]Health insurance coverage is based on a hierarchy of mutually exclusive categories. Persons with more than one type of health insurance were assigned to the first appropriate category in the hierarchy. The category ''Uninsured'' includes persons who had no coverage as well as those who had only Indian Health Service coverage or had only a private plan that paid for one type of service such as accidents or dental care.

[11]Medicaid includes the State Childrens Health Insurance Plan (SCHIP) and other State health plans.

SOURCES: 2001–2003 National Health Interview Surveys (NHIS).

Table 2. Percent (with standard error) of boys ages 4–17 years in the U. S. population whose parent perceived them as having definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others by selected characteristics: United States, 2001–2003

Selected characteristic	2001[1,2]	2002[1,2]	2003[1,2]
		Percent[3] (standard error)	
Total[4]	6.2 (0.38)	7.5 (0.47)	6.3 (0.46)
Age			
4–7 years	3.8 (0.57)	4.3 (0.68)	4.8 (0.92)
8–10 years	8.2 (0.95)	8.0 (1.05)	7.3 (0.93)
11–14 years	7.4 (0.83)	10.0 (0.98)	6.5 (0.83)
15–17 years	5.6 (0.76)	7.6 (0.97)	6.9 (1.03)
Race/ethicity[5]			
White, single race, not Hispanic	6.3 (0.48)	7.3 (0.59)	6.6 (0.65)
Black, single race, not Hispanic	6.9 (1.08)	11.9 (1.32)	8.3 (1.20)
Hispanic or Latino[6]	5.2 (0.67)	5.3 (0.81)	4.7 (0.72)
Family structure[7]			
Mother and father	5.0 (0.41)	5.7 (0.49)	5.4 (0.56)
Mother, no father	9.3 (1.05)	12.5 (1.33)	9.6 (0.96)
Father, no mother	8.0 (1.88)	6.2 (1.91)	*3.8 (1.34)
Mother's education			
Less than high school diploma	7.2 (1.05)	8.2 (1.34)	6.9 (1.21)
High school diploma or GED[8]	5.6 (0.76)	8.9 (1.01)	6.0 (0.77)
More than high school	5.8 (0.51)	6.4 (0.63)	6.4 (0.71)
Poverty status[9]			
Poor	10.1 (1.51)	13.5 (1.94)	12.1 (1.69)
Near poor	9.1 (1.21)	10.4 (1.40)	7.1 (1.06)
Not poor	5.0 (0.44)	6.2 (0.59)	6.1 (0.72)
Health insurance coverage[10]			
Private	4.4 (0.38)	6.0 (0.53)	4.6 (0.54)
Medicaid[11]	12.3 (1.29)	12.3 (1.23)	11.4 (1.07)
Uninsured	6.1 (1.19)	6.2 (1.31)	6.6 (1.38)

* Estimates have a relative standard error of greater than 30 percent and should be used with caution as they do not meet the standard of reliability or precision.

[1]Child had definite or severe difficulties based on the question, ''Overall, do you think that (child's name) has a difficulty with emotions, concentration, behavior, or being able to get along with others?''

[2]In the tables and text of this report a parent or knowledgeable responding adult will be referred to by the term ''parent'' for purposes of conciseness.

[3]Unknowns for the column variables are not included in the denominators when calculating percents.

[4]Total includes children of other race/ethnicity, family structure, or health insurance coverage and with unknown family structure, education, poverty status, and health insurance coverage.

[5]In accordance with the 1997 Standards for Federal data on race and Hispanic or Latino origin, detailed information on single race and multiple race combinations is collected in the NHIS. However, due to the small sample sizes associated with studying children with emotional and learning difficulties, only two single race categories are shown.

[6]Persons of Hispanic or Latino origin may be of any race or combination of races.

[7]Family structure refers to parents living in the household. ''Mother and father'' can include biological, adoptive, step, or foster relationships.

[8]GED is General Educational Development high school equivalency diploma.

[9]Poverty status is based on family income and family size using the U. S. Census Bureau's poverty thresholds for the previous calendar year. ''Poor'' persons are defined as below the poverty level. ''Near poor'' persons have incomes of 100 percent to less than 200 percent of the poverty threshold. ''Not poor'' persons have incomes that are 200 percent of the poverty threshold or greater.

[10]Health insurance coverage is based on a hierarchy of mutually exclusive categories. Persons with more than one type of health insurance were assigned to the first appropriate category in the hierarchy. The category ''Uninsured'' includes persons who had no coverage as well as those who had only Indian Health Service coverage or had only a private plan that paid for one type of service such as accidents or dental care.

[11]Medicaid includes the State Childrens Health Insurance Plan (SCHIP) and other State health plans.

SOURCES: 2001–2003 National Health Interview Surveys (NHIS).

Table 3. Percent (with standard error) of girls ages 4–17 years whose parent perceived them as having definite or severe difficulties in emotions, concentration, behavior, or being able to get along with others by selected characteristics: United States, 2001–2003

Selected characteristic	2001[1,2]	2002[1,2]	2003[1,2]
	Percent[3] (standard error)		
Total[4]	4.1 (0.34)	3.5 (0.35)	3.3 (0.32)
Age			
4–7 years	3.4 (0.62)	2.0 (0.45)	1.8 (0.42)
8–10 years	3.5 (0.67)	3.6 (0.89)	3.5 (0.66)
11–14 years	4.6 (0.71)	3.5 (0.61)	3.2 (0.64)
15–17 years	4.9 (0.82)	5.2 (0.82)	5.2 (1.06)
Race/ethnicity[5]			
White, single race, not Hispanic	4.5 (0.46)	3.7 (0.46)	3.8 (0.45)
Black, single race, not Hispanic	4.4 (0.90)	5.0 (0.98)	2.7 (0.72)
Hispanic or Latino[6]	2.6 (0.44)	2.0 (0.51)	2.6 (0.63)
Family structure[7]			
Mother and father	3.0 (0.39)	2.5 (0.35)	2.6 (0.31)
Mother, no father	7.1 (0.87)	5.9 (0.93)	4.7 (0.81)
Father, no mother	*2.0 (1.05)	*4.6 (1.73)	*3.4 (1.73)
Mother's education			
Less than high school diploma	4.0 (0.88)	3.8 (1.06)	3.1 (0.63)
High school diploma or GED[8]	3.4 (0.53)	3.4 (0.63)	3.4 (0.60)
More than high school	4.4 (0.53)	3.3 (0.45)	3.0 (0.44)
Poverty status[9]			
Poor	6.7 (1.31)	8.4 (1.55)	3.7 (1.11)
Near poor	5.1 (0.85)	*3.5 (0.84)	5.1 (0.91)
Not poor	3.5 (0.42)	2.8 (0.42)	3.1 (0.48)
Health insurance coverage[10]			
Private	3.0 (0.34)	2.8 (0.39)	2.3 (0.35)
Medicaid[11]	8.3 (1.17)	5.1 (0.84)	5.9 (0.95)
Uninsured	*3.7 (1.15)	4.3 (1.11)	4.0 (1.20)

* Estimates have a relative standard error of greater than 30 percent and should be used with caution as they do not meet the standard of reliability or precision.

[1]Child had definite or severe difficulties based on the question, ''Overall, do you think that (child's name) has a difficulty with emotions, concentration, behavior, or being able to get along with others?''

[2]In the tables and text of this report a parent or knowledgeable responding adult will be referred to by the term ''parent'' for purposes of conciseness.

[3]Unknowns for the column variables are not included in the denominators when calculating percents.

[4]Total includes children of other race/ethnicity, family structure, or health insurance coverage and with unknown family structure, education, poverty status, and health insurance coverage.

[5]In accordance with the 1997 Standards for Federal data on race and Hispanic or Latino origin, detailed information on single race and multiple race combinations is collected in the NHIS. However, due to the small sample sizes associated with studying children with emotional and learning difficulties, only two single race categories are shown.

[6]Persons of Hispanic or Latino origin may be of any race or combination of races.

[7]Family structure refers to parents living in the household. ''Mother and father'' can include biological, adoptive, step, or foster relationships.

[8]GED is General Educational Development high school equivalency diploma.

[9]Poverty status is based on family income and family size using the U. S. Census Bureau's poverty thresholds for the previous calendar year. ''Poor'' persons are defined as below the poverty level. ''Near poor'' persons have incomes of 100 percent to less than 200 percent of the poverty threshold. ''Not poor'' persons have incomes that are 200 percent of the poverty threshold or greater.

[10]Health insurance coverage is based on a hierarchy of mutually exclusive categories. Persons with more than one type of health insurance were assigned to the first appropriate category in the hierarchy. The category ''Uninsured'' includes persons who had no coverage as well as those who had only Indian Health Service coverage or had only a private plan that paid for one type of service such as accidents or dental care.

[11]Medicaid includes the State Childrens Health Insurance Plan (SCHIP) and other State health plans.

SOURCES: 2001–2003 National Health Interview Surveys (NHIS).

Table 4. Percent (with standard error) of children ages 4–17 years who had use of or contact with selected health services, received special education, and had unmet mental health need by whether their parent perceived them as having definite or severe difficulties with emotions, concentration, behavior, or being able to get along with others: United States, 2001–2003

Year and difficulty status	Visit to a general doctor for an emotional or behavioral problem[1]	Contact with a mental health professional in the past 12 months[2]	Received special education services for an emotional or behavioral problem[3]	Needed but could not afford mental health services[4]
2001		Percent[5] (standard error)		
Children whose parent perceived definite or severe difficulties[6]	37.8 (2.61)	43.8 (2.48)	22.2 (2.38)	10.0 (1.72)
Children whose parent did not perceive definite or severe difficulties[6]	3.1 (0.21)	4.7 (0.24)	1.2 (0.13)	0.8 (0.11)
2002				
Children whose parent perceived definite or severe difficulties[6]	39.3 (2.67)	46.6 (2.63)	24.3 (2.40)	8.6 (1.64)
Children whose parent did not perceive definite or severe difficulties[6]	3.4 (0.23)	5.5 (0.28)	1.1 (0.13)	0.8 (0.13)
2003				
Children whose parent perceived definite or severe difficulties[6]	39.2 (2.97)	44.5 (3.18)	22.7 (2.53)	9.3 (1.66)
Children whose parent did not perceive definite or severe difficulties[6]	2.6 (0.20)	4.7 (0.25)	1.1 (0.14)	0.5 (0.08)

[1]Visit to a general doctor for an emotional problem was defined as a positive response to two questions. The first: During the past 12 months have you seen or talked to a general doctor, that is a doctor who treats a variety of illnesses (a doctor in general practice, pediatrics, family medicine, or internal medicine) about (child's name) health? The second: Did you see or talk to this doctor because of an emotional or behavioral problem that (child's name) may have?

[2]Contact with a mental health professional was defined as a positive response to: During the past 12 months have you seen or talked to a mental health professional such as psychiatrist, psychologist, psychiatric nurse, or clinical social worker about (child's name) health?

[3]Received special education services was defined as a positive response to two questions. The first: Do any of the children in this family receive Special Education Services or Early Intervention Services? The second: Does (child's name) receive these services because of an emotional or behavioral problem?

[4]Needed but could not afford mental health services was defined as a positive response to: During the past 12 months was there any time when (child's name) needed mental health care or counseling but didn't get it because you couldn't afford it?

[5]Unknowns for the column variables are not included in the denominators when calculating percents.

[6]Child had definite or severe difficulties based on the question, ''Overall, do you think that (child's name) has a difficulty with emotions, concentration, behavior, or being able to get along with others?''

NOTE: A child who had more than one service or contact was included in more than one column.

SOURCES: 2001–2003 National Health Interview Surveys (NHIS).

Technical Notes

Sample design

The National Health Interview Survey (NHIS) is a cross-sectional household interview survey of the U.S. civilian noninstitutionalized population. Data are collected continuously throughout the year in all 50 States and the District of Columbia. The NHIS uses a multistage, clustered sample design to produce estimates for a variety of health indicators. Information on basic health topics is collected for all household members by proxy from one family member, if necessary. Additional information is collected for one randomly selected adult and one randomly selected child in each family. Interviews are conducted in the home using a computer assisted personal interview (CAPI) questionnaire with telephone interviewing permitted for followup, if necessary.

Response rates

The interviewed sample for 2001 consisted of 38,932 households, which yielded 100,761 persons in 39,633 families. There were 14,766 children under 18 years of age eligible for the Sample Child questionnaire, and data were collected for 13,579 children, a conditional response rate of 92.0%. The unconditional or final response rate for the Sample Child component was calculated by multiplying the conditional response rate by the overall family response rate of 87.6%, yielding a rate of 80.6% (28). Data on the SDQ questions were collected for 10,367 children between 4–17 years of age.

The interviewed sample for 2002 consisted of 36,161 households, which yielded 93,386 persons in 36,831 families. There were 13,570 children under 18 years of age eligible for the Sample Child questionnaire, and data were collected for 12,524 children, a conditional response rate of 92.3%. The unconditional or final response rate for the Sample Child component was calculated by multiplying the conditional response rate by the overall family response rate of 88.1%, yielding a rate of 81.3% (29). Data on the SDQ questions were collected for 9,512 children between 4–17 years of age.

The interviewed sample for 2003 consisted of 35,921 households, which yielded 92,148 persons in 36,573 families. There were 13,275 children under 18 years of age eligible for the Sample Child questionnaire, and data were collected for 12,249 children, yielding a conditional response rate of 92.3%. The unconditional or final response rate for the Sample Child component was calculated by multiplying the conditional response rate by the overall family response rate of 87.9% yielding a rate of 81.1% (30). Data on the SDQ questions were collected for 9,399 children between 4–17 years of age.

Item nonresponse and missing data

Missing data were not included in this analysis and were deleted from the denominator. Item nonresponse includes ''refused,'' ''don't know,'' and ''not ascertained.'' These responses were less than 1% for the sociodemographic variables, with the exception of questions related to income that were used to compute poverty status. Item nonresponse for detailed income was about 19.5%. Files with imputed income were not available when this analysis was done. Nonresponse for questions on emotional and behavioral difficulties was less than 2%, and for questions on service utilization it was less than 1%.

Tests of significance

Statistical tests performed to assess significance of differences in the estimates were two-tailed with no adjustments for multiple comparisons. The test statistic used to determine statistical significance of differences between two percents was

$$Z = \frac{|X_a - X_b|}{\sqrt{S_a^2 + S_b^2}}$$

Here X_a and X_b are the two percents being compared, and S_a and S_b are the standard errors of the percents. The critical value used for two-sided tests at the 0.05 level of significance was 1.96.

Relative standard error

The relative standard error (RSE) of an estimate is obtained by dividing the standard error (SE(x)) of the estimate by the estimate (x) itself. This quantity is expressed as percent of the estimate: Relative standard error = (SE/Est)100.

In the tables, estimates having an RSE of more than 30% are indicated with an asterisk and are considered statistically unreliable.

Definition of terms

Age—The age recorded for each child is the age at the last birthday. Age is recorded in single years.

Family structure—Family structure describes the parent(s) living in the household with the sample child. Mother and father can include biological, adoptive, step, or foster parents. Legal guardians are not classified as parents.

Health insurance coverage—NHIS respondents were asked about their health insurance coverage at the time of interview. Respondents reported whether they were covered by private insurance (obtained through the employer or workplace, purchased directly, or through a local or community program), Medicare, Medigap (supplemental Medicare coverage), Medicaid, State Children's Health Insurance Program (SCHIP), Indian Health Service (IHS), military coverage (including VA, TRICARE, or CHAMP-VA), a State-sponsored health plan, another government program, and/or single service plans.

For persons under age 65, a health insurance hierarchy of four mutually exclusive categories was developed (19, 20). Persons with more than one type of health insurance were assigned to the first appropriate category in the following hierarchy:

Private coverage—Includes persons who had any comprehensive private insurance plan (including health maintenance organizations and preferred provider organizations). These plans include those obtained through an employer and those purchased directly or through local or community programs.

Medicaid—Includes persons who do not have private coverage, but who have Medicaid or other State-sponsored health plans including SCHIP.

Uninsured—Includes persons who have not indicated that they are covered at the time of the interview under private health insurance (from employer or workplace; purchased directly; or through a State, local government, or community program), Medicare, Medicaid, SCHIP, a State-sponsored health plan, other government programs, or military health plan (includes VA, TRICARE, and CHAMP-VA). This category also includes persons who are only covered by IHS or only have a plan that pays for one type of service such as accidents or dental care. In 2001–2003, insurance coverage is unknown for approximately 1%.

Race/ethnicity—In accordance with the 1997 Standards for Federal data on race and Hispanic or Latino origin, detailed information on single race and multiple race combinations are collected in the NHIS. The questions related to race and ethnicity were initially asked of the household respondent for all family members and subsequently verified by the sample adult. Persons reporting any Hispanic ethnicity, including persons of Mexican, Puerto Rican, Cuban, Central or South American, or Spanish origins, were classified as ''Hispanic or Latino.'' Persons of Hispanic or Latino origin may be of any race. Although several single and multiple race categories are identified in the NHIS, this report is limited to the following three race/ethnicity groups: Hispanic; white, single race, non-Hispanic; and black, single race, non-Hispanic. Other groups were not shown separately in this report due to small sample sizes and large standard errors associated with most statistics for these groups. The race/ethnicity categories presented in this report are consistent with the 1997 Office of Management and Budget (OMB) guidelines for reporting race and ethnicity (49).

Education of mother—This reflects the highest grade in school completed by the sample child's mother.

Poverty status—Poverty status is based on family income and family size using the U.S. Census Bureau's poverty thresholds. ''Poor'' persons are defined as persons whose family incomes are below the poverty threshold. ''Near poor'' persons have family incomes of 100% to less than 200% of the poverty threshold. ''Not poor'' persons have family incomes that are 200% of the poverty threshold or greater.

Description of impact and service questions

Contacts with a mental health professional—A contact with a mental health professional is defined as a visit to or conversation with a psychiatrist, psychologist, clinical social worker, or psychiatric nurse about the health of the sample child during the past 12 months. Contacts include home visits, office visits, or telephone calls for medical advice, prescriptions, or test results. A telephone call to schedule an appointment is not included as a contact.

Impact questions—Impairment questions were asked if two criteria were met. First, the parent responded positively to any of the three ''yes'' responses to the question, *"Overall do you think that (child's name) has difficulty in any of the following areas: emotions, concentration, behavior, or being able to get along with others?" The response choices are (1) No; (2) Yes, minor difficulties; (3) Yes, definite difficulties; or (4) Yes, severe difficulties.* Secondly, once it was established that the child had a difficulty, the parent was asked how long the difficulty has been present. If the child had the difficulty for at least 1 month or more, the parent was asked the impact questions.

The impact questions focus on the child's difficulty and ask: *"Do the difficulties upset or distress your child?" and "Do the difficulties interfere with your child's life in the following areas:*

Home life
Friendships
Classroom learning
Leisure activities

Responses are *(1) Not at all; (2) A little; (3) A medium amount; or (4) A great deal.*

Received special education services—The child was receiving special education services for an emotional or behavioral problem at the time of the survey interview.

Visit with a general doctor for an emotional or behavioral problem—The child saw a general doctor such as a doctor who treats a variety of illnesses (a doctor in general practice, pediatrics, family medicine, or internal medicine) in the past 12 months; and the child saw the doctor because of an emotional or behavioral problem the child was having.

Needed but could not afford mental health services—The child needed mental health care or counseling during the past 12 months, but did not get it because the family could not afford it. This question, as are all questions about the children, is answered by the parent or respondent; thus, unmet need is the perception of the respondent.

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