National Health Statistics Reports

Number 19 ■ November 4, 2009

Functional Difficulties Among School-Aged Children: United States, 2001–2007

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Abstract

Objective—This report presents estimates of basic actions difficulty, which includes difficulties related to sensory, motor, cognitive, and emotional or behavioral functioning, in U.S. children aged 5–17 years based on questions from the National Health Interview Survey (NHIS). Selected estimates are shown for the educational and health care service use of children with and without basic actions difficulty.

Methods—Estimates of basic actions difficulty were derived from the Family Core and the Sample Child Core questionnaires of the 2001–2007 NHIS. Estimates were generated and compared using SUDAAN, a statistical package that adjusts for the complex sample design of NHIS.

Results—Approximately 18% of children aged 5–17 had basic actions difficulty in one or more of the following domains of functioning: sensory, movement, cognitive, or emotional or behavioral. The percentage of children with difficulty in specific domains varied: 3% had sensory difficulty, 2% movement difficulty, 9% cognitive difficulty, and 10% emotional or behavioral difficulty. From 2001 through 2007, the percentage of children aged 5–17 with basic actions difficulty remained stable at about 18%. Children with and without basic actions difficulty differed greatly in their use of both educational and health care services. One-third of children with basic actions difficulty used special education services compared with 2% of children without basic actions difficulty. A substantially higher percentage of children with basic actions difficulty used health care services, including mental health care, other types of therapy, and prescription medication, than children without basic actions difficulty.

Keywords: basic actions difficulty • service utilization • child disability

Introduction

Functional difficulties in children have major consequences for children and the communities in which they live. For children, early identification of functional difficulties and timely initiation of relevant health care, therapies, and educational services can lessen the impact on development (1). For communities, data on the number of children with functional difficulties can help to guide equitable provision of effective health care and educational services (2). National health surveys have a major role in these efforts by providing nationally representative and timely data about the characteristics and service use of children with functional difficulties (3).

Since its inception, the National Health Interview Survey (NHIS) has included questions that assess the impact of health conditions and impairments on a child's functioning (4). Over the years, several summary measures of functional difficulties based on NHIS questions have been proposed (3,5). The variation in estimates based on these measures reflects, in part, differences in the particular survey questions used to measure functional difficulties in children. The basic actions difficulty measure presented in this report is a broad summary measure of functional difficulties that uses the conceptual framework of the *International Classification of Functioning, Disability and Health—Version for Children & Youth* (ICF-CY) (6). Development of this measure has also been influenced by the concept of basic actions difficulty developed by Altman and Bernstein for a recent chartbook on adult disability (7).

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The objectives of this report include: 1) Description of a basic actions difficulty measure for children aged 5–17 years and examination of the specific questions from the 2001–2007 NHIS used to create this measure; 2) estimates of the prevalence of specific functional difficulties in school-aged children aged 5–17; 3) estimates of the prevalence of activities of daily living (ADL) limitations for children with basic actions difficulty; and 4) estimates of the educational and health care services use of school-aged children with basic actions difficulty. Differences in the prevalence of basic actions difficulty among children and the use of selected services by these children are shown by the children's demographic and socioeconomic characteristics. Two characteristics—poverty status and health insurance coverage—are highlighted because of their association with basic actions difficulty and their relationship to the use of educational and health care services by children with basic actions difficulty.

Methods

Data source

The information presented in this report is based on questions from the Family Core and Sample Child Core components of the 2001–2007 NHIS (http://www.cdc.gov/nchs/nhis/nhis_questionnaires.htm). NHIS is a household survey conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics and is fielded continuously throughout the year. The survey involves interviews of a nationally representative sample of the civilian noninstitutionalized population of the United States. Some health and demographic information is collected for all household members. Additional, detailed health-related information is collected for one randomly selected child (''sample child'') in each family that includes children aged 0–17 years. Information about children is collected from an adult, usually a parent, who is knowledgeable about the child's health. This report includes information only about children aged 5–17. Information about children under age 5 is not included because of the different criteria used to determine functional difficulty in those children compared with children aged 5–17 (8). In this report, the term ''school-aged'' is used to refer to children aged 5–17.

Measurement of basic actions difficulty

Basic actions difficulty in children is defined as difficulty in any of the following core areas or domains of functioning:

- Sensory (seeing and hearing)
- Movement (lower body movement)
- Cognitive
- Emotional or behavioral

Table 1 shows the exact wording of the questions for each domain and, for each question, the response categories that indicate functional difficulty (shown in bold-italic type). The location of each question in the NHIS questionnaire is also shown in the table's last column. Most questions measuring basic actions difficulty are from the Sample Child Core questionnaire and were asked only for sample children. However, two questions measuring basic actions difficulty are from the Family Core Questionnaire. These questions were asked of all persons in the sample households, including sample children.

Most of the questions used to identify basic actions difficulty are questions about the child's functioning. However, in the domains of cognitive and emotional or behavioral functioning, questions concerning the diagnosed conditions of mental retardation, Down syndrome, autism, learning disability, and attention deficit hyperactivity disorder (ADHD) are also used to identify basic actions difficulty. Ideally, a measure of basic actions difficulty would be based only on questions assessing a child's functional abilities. However, in the domains of cognitive and emotional or behavioral functioning, NHIS included only a few questions directly measuring a child's functional abilities, and data for only one of these questions (on overall serious emotional or behavioral difficulty) were available for all of the survey years (2001 through 2007). As a result, answers to questions concerning diagnosed conditions are used as indicators of cognitive and emotional or behavioral difficulty. Unlike physical disorders that are diagnosed on the basis of a physical examination or the results of a laboratory test, the cognitive and emotional or behavioral conditions used to measure basic actions difficulty are often diagnosed on the basis of parental reports of the child's observed symptomatology (9).

Parental reports of functional difficulty or diagnosed conditions were not verified by information from the child's health or school records. As a consequence, the criteria used by individual parents to determine specific types of functional difficulty are unknown and likely to vary. Furthermore, the measure of basic actions difficulty does not include any information about the duration or severity of a child's difficulties.

Measurement of other variables

Other variables used in the description of basic actions difficulty include a child's demographic and socioeconomic characteristics, ADL limitations (personal care needs such as eating, bathing, or dressing), and use of educational and health care services. Definitions of these variables are included in ''Technical Notes.''

Statistical analysis

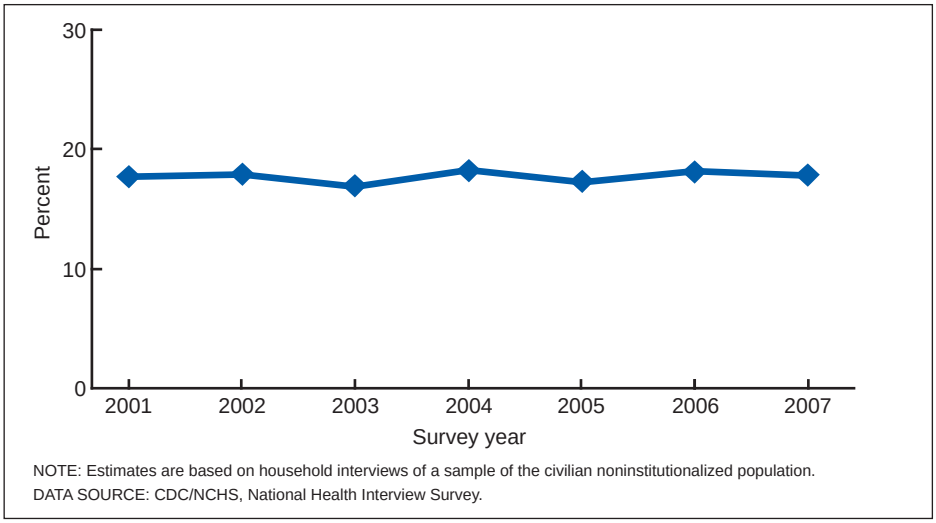
The annual number of interviews completed for all sample children aged 0–17 in NHIS varied from 13,579 in 2001 to 9,417 in 2007. The final annual sample-child response rate also varied, from 77%–81%; see ''Technical Notes'' for a description of the procedures used in calculating final annual sample-child response rates (http://www.cdc.gov/nchs/nhis/quest_data_related_1997_forward.htm). This report is based on data from 57,610 interviews for sample

children aged 5–17 from 2001 through 2007 who had complete information for all of the variables used to identify basic actions difficulty. Among 58,679 sample children aged 5–17 in the 2001–2007 NHIS, 1,069 children (2%) were missing data for basic actions difficulty.

Average annual estimates of the number of children with basic actions difficulty and difficulty in specific domains were calculated using data for the 2001–2007 time period. The population estimate used to calculate the number of children with basic actions difficulty is the total, average annual number of children aged 5–17 in the population and includes children who have missing data on basic actions difficulty.

All estimates and associated standard errors shown in this report were generated using SUDAAN, a software package designed to account for the complex design of the NHIS sample (10). All estimates for children were calculated using the sample child record weight and are representative of the U.S. noninstitutionalized population of children aged 5–17. Estimates in this report that have a relative standard error of more than 30% and less than or equal to 50% are identified with an asterisk (*), indicating that they are statistically unstable due to small sample size. The difference between two percentages is described as small if the absolute difference is less than 1 percentage point. Percentages in this report are based on combined data for 2001–2007 and are described as average annual estimates for 2001–2007.

Comparisons of estimates are based on two-tailed significance tests at the 0.05 level. No adjustments were made for multiple comparisons. Terms such as ''greater than'' and ''less than'' indicate a statistically significant difference. Terms such as ''similar'' or ''no difference'' indicate that the estimates being compared were not significantly different. Lack of comment regarding the difference between two estimates does not mean that the difference was tested and determined not to be significant. Because of the cross-sectional nature of the data collected in NHIS, an association between variables does not indicate a causal connection. More information concerning the data source and statistical analysis can be found in ''Technical Notes.''



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 1. Prevalence of any basic actions difficulty among children aged 5–17 years, by year: United States, average annual estimates for 2001–2007

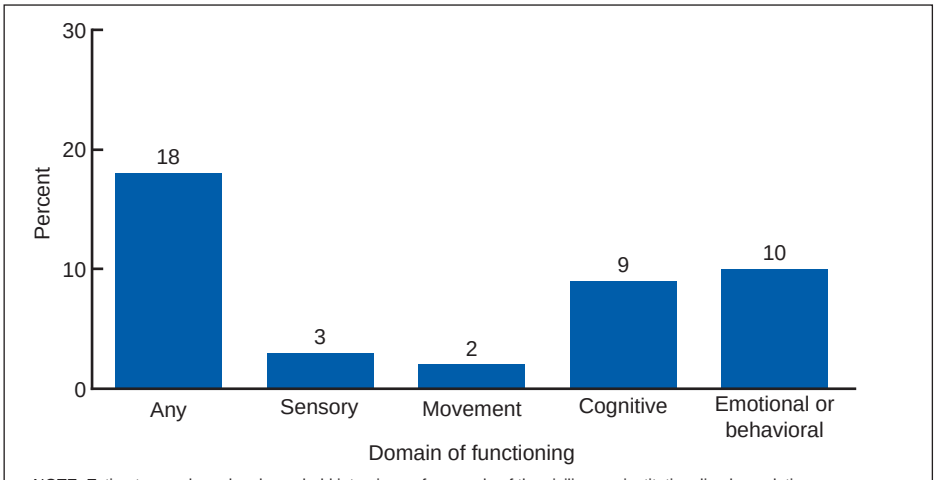
Results

Basic actions difficulty prevalence and trend (Figure 1, Table 2)

- From 2001 through 2007, the percentage of children aged 5–17 years with basic actions difficulty remained relatively stable at about 18%.
- Approximately 9.4 million children aged 5–17 (18%) had basic actions difficulty in one or more of the following domains: sensory, movement, cognitive, or emotional or behavioral functioning.

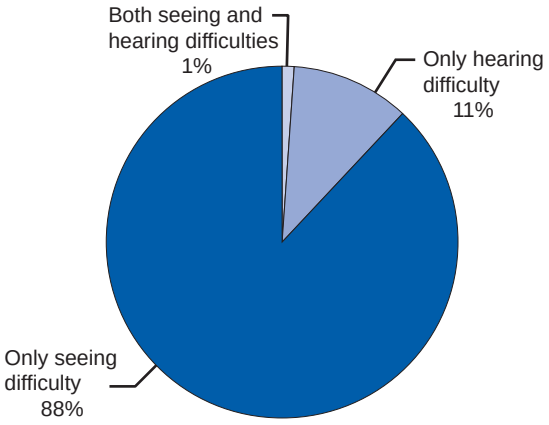
Prevalence of basic actions difficulty by domain (Figure 2, Table 2)

- About 3% of children aged 5–17 (1.8 million) had a parental report of



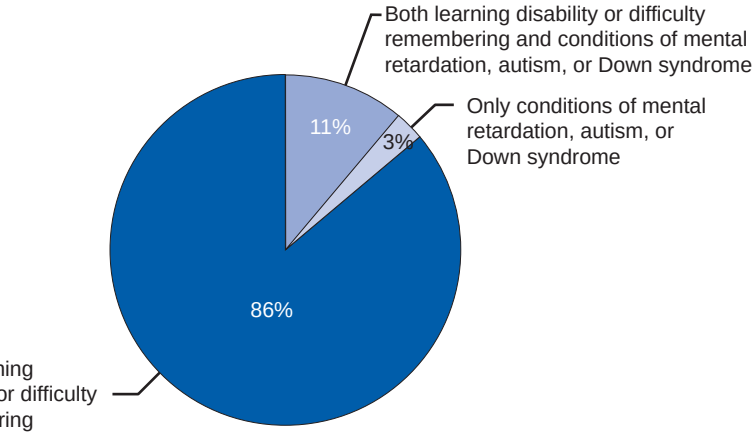
NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 2. Prevalence of basic actions difficulty among children aged 5–17 years, by domain of functioning: United States, average annual estimates for 2001–2007



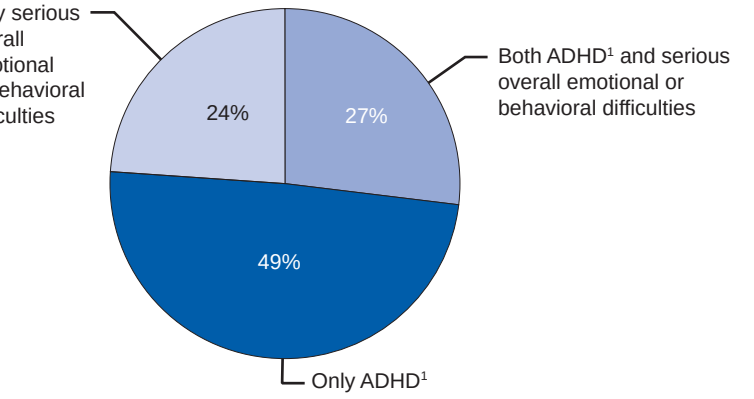
NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 3. Percentage of children aged 5–17 years with specific difficulties among children with any sensory difficulty: United States, average annual estimates for 2001–2007



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 4. Percentage of children aged 5–17 years with specific difficulties among children with any cognitive difficulty: United States, average annual estimates for 2001–2007



[1]Attention deficit hyperactivity disorder.
NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

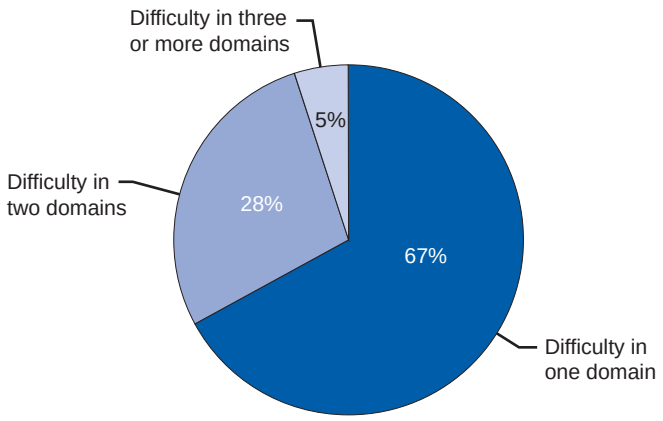
Figure 5. Percentage of children aged 5–17 years with specific difficulties among children with any emotional or behavioral difficulty: United States, average annual estimates for 2001–2007

sensory difficulty and 2% (1.1 million) had movement difficulty.

- Compared with sensory or movement difficulty, cognitive and emotional or behavioral difficulty were reported for many more children. About 9% of children aged 5–17 (4.7 million) had a report of cognitive difficulty, and 10% (5.5 million) had a report of emotional or behavioral difficulty.

Measurement of basic actions difficulty by domain (Figures 3–5)

- Among children with **sensory difficulty**, most children were reported to have difficulty only in seeing (88%). About 11% of children with sensory difficulty had difficulty only in hearing. Few children with sensory difficulty (1%) had difficulty involving both seeing and hearing.
- Among children with **movement difficulty**, nearly all (99%) were identified by answers to the question about whether a child had an impairment or health problem that limited their ability to walk, run, or play.
- Most children with **cognitive difficulty** (86%) were reported to have only a learning disability or difficulty remembering. Relatively few children (3%) were identified solely by a parental report of a diagnosis of mental retardation, Down syndrome, or autism. About 11% of the children with cognitive difficulty had both a) a learning disability or difficulty remembering, and b) a diagnosis of mental retardation, Down syndrome, or autism.
- Nearly one-half of children with **emotional or behavioral difficulty** (49%) were reported to have a diagnosis of ADHD only. About one-quarter lacked a diagnosis of ADHD (24%), but were reported to have serious difficulty with their emotions, concentration, behavior, or being able to get along with other people. Slightly more than one-quarter of children with emotional or behavioral difficulty (27%) had both a diagnosis of ADHD and serious difficulty with their emotions, concentration, behavior,



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 6. Prevalence of basic actions difficulty among children aged 5–17 years, by number of domains of difficulty: United States, average annual estimates for 2001–2007

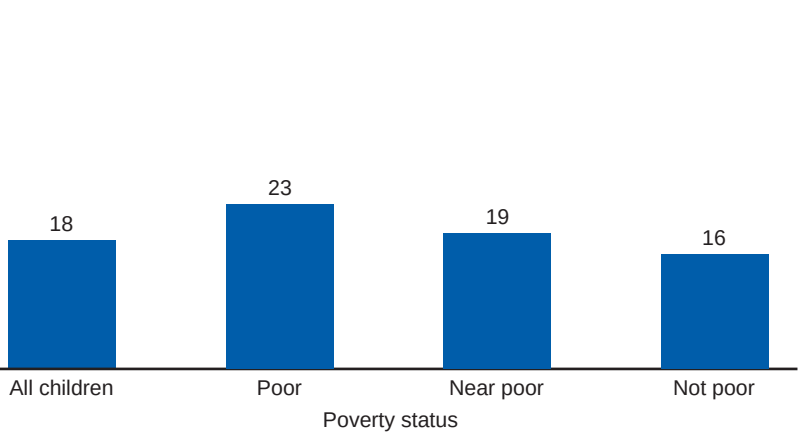
or being able to get along with other people.

Basic actions difficulty by number of domains (Figure 6)

- Most children with basic actions difficulty had difficulty in one domain of functioning (66%). Approximately 28% had difficulty in two domains, and less than 6% had difficulty in three or more domains.

Basic actions difficulty and children's characteristics (Table 3)

- Children aged 12–17 (21%) were more likely to have basic actions difficulty than children aged 5–11 (15%).
- Males (22%) were more likely to have basic actions difficulty than females (14%).
- Both non-Hispanic white and non-Hispanic black children (19%) were more likely to have basic actions difficulty than Hispanic children (14%).
- Children in mother-only families (24%) were more likely to have difficulty than children in two-parent families (15%).
- Poor children (23%) were more likely to have basic actions difficulty than children who were not poor (16%) (Figure 7).
- Children with public health insurance coverage (25%) were more likely to have difficulty than either children with private health insurance coverage (16%) or uninsured children (16%).



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 7. Prevalence of any basic actions difficulty among children aged 5–17 years, by poverty status: United States, average annual estimates for 2001–2007

Sensory difficulty and children's characteristics (Table 4)

- Poor children (5%) were more likely to have sensory difficulty than children who were not poor (3%).
- Children with public insurance coverage (4%) and uninsured children (4%) were more likely to have sensory difficulty than children with private insurance coverage (3%).
- Children in mother-only families (4%) were more likely to have sensory difficulty than children in two-parent families (3%).
- The differences in the prevalence of sensory difficulty by a child's age, sex, and race or ethnicity were either small (a difference of less than 1 percentage point) or not statistically significant.

Movement difficulty and children's characteristics (Table 4)

- Poor children (3%) were more likely to have movement difficulty than children who were not poor (2%).
- Children with public insurance coverage (3%) were more likely to have movement difficulty than children with private health insurance coverage (2%) and uninsured children (2%).
- Children in mother-only families (3%) were more likely to have

sensory difficulty than children in two-parent families (2%).
- Differences in the prevalence of movement difficulty by a child's age, sex, and race or ethnicity were either small (a difference of less than 1 percentage point) or not statistically significant.

Cognitive difficulty and children's characteristics (Table 4)

- Poor children (12%) were more likely to have cognitive difficulty than children who were not poor (8%).
- Children with public insurance coverage (14%) were more likely to have cognitive difficulty than children with private health insurance coverage (7%) and uninsured children (7%).
- Differences in the prevalence of cognitive difficulty by a child's age, sex, race or ethnicity, and family structure were similar to the differences observed for any basic actions difficulty.

Emotional or behavioral difficulty and children's characteristics (Table 4)

- Poor children (13%) were more likely to have emotional or behavioral difficulty than children who were not poor (9%).
- Children with public insurance coverage (15%) were more likely to have emotional or behavioral difficulty than children with private health insurance coverage (9%) and uninsured children (8%).
- Differences in the prevalence of emotional or behavioral difficulty by a child's age, sex, race or ethnicity, and family structure were similar to the differences observed for any basic actions difficulty.

Difficulty in more than one domain and children's characteristics (Table 5)

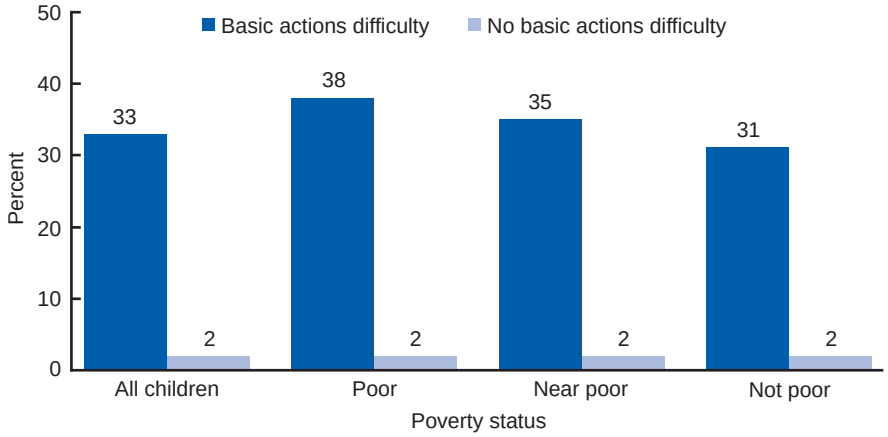
- Poor children (8%) were more likely to have difficulty in more than one domain than children who were not poor (5%).
- Children with public insurance coverage (9%) were more likely to have difficulty in more than one domain than children with private health insurance coverage (5%) and uninsured children (4%).
- Differences in the prevalence of difficulty in more than one domain by a child's age, sex, race or ethnicity, and family structure were similar to the differences observed for any basic actions difficulty.

Limitations in activities of daily living (Table 6)

- The prevalence of ADL limitations among all children aged 5–17 was less than 1%. Among children with basic actions difficulty, the prevalence was higher at 3%. Nearly all of the children with ADL limitations were also reported to have basic actions difficulty.
- Among children with basic actions difficulty:
  - ADL limitations were not associated with poverty status.
  - Children with public health insurance coverage (4%) more often had ADL limitations than children with private health insurance coverage (2%).
  - Differences in ADL limitations by a child's age, sex, race or ethnicity, and family structure were either small (a difference of less than 1 percentage point) or not statistically significant.

Special education use (Table 7, Figure 8)

- Children with basic actions difficulty were more likely to use special education services (33%) than children without basic actions difficulty (2%).
- Among children with basic actions difficulty:
  - Males (35%) were more likely to use special education services than females (30%).
  - Children in mother-only families (37%) were more likely to use special education services than children in two-parent families (32%).
  - Poor children (38%) were more likely to use special education services than children who were not poor (31%).
  - Children with public health insurance coverage (41%) were much more likely to use special education services than children with private health insurance



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

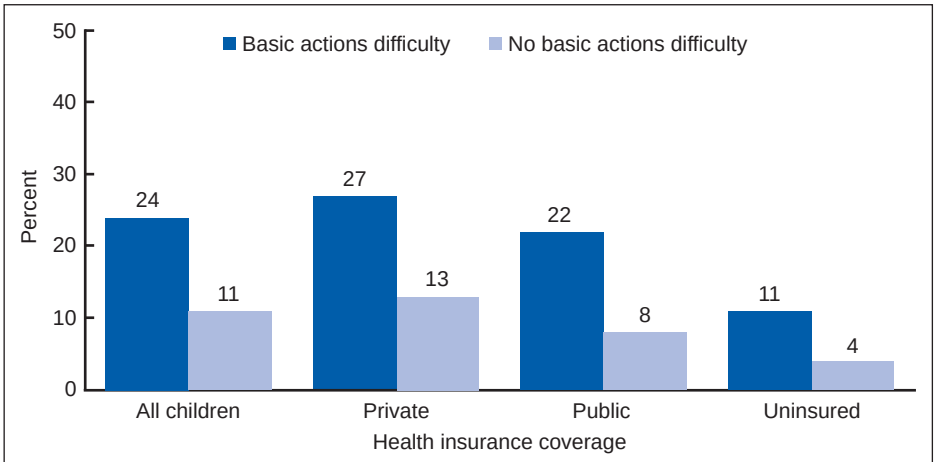
Figure 8. Use of special education services among children aged 5–17 years with and without basic actions difficulty, by poverty status: United States, average annual estimates for 2001–2007

coverage (30%) and uninsured children (26%).
- Differences in the use of special education services by a child's age and race or ethnicity were not statistically significant.

- A separate analysis of children without basic actions difficulty who used special education services found that about one-half of these children (52%) used these services because of speech problems.

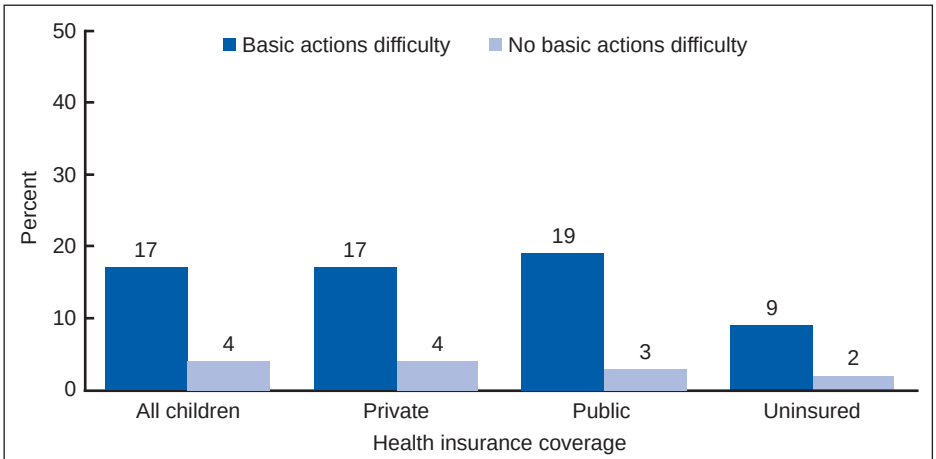
Contact with a medical specialist (Table 8)

- Children with basic actions difficulty were more likely to have had contact with a medical specialist during the past 12 months (24%) than children without basic actions difficulty (11%).
- Among children with basic actions difficulty:
  - Non-Hispanic white children (27%) were more likely to have had contact with a medical specialist than non-Hispanic black children (16%) and Hispanic children (20%).
  - Children who were not poor (27%) were more likely to have had contact with a medical specialist than near-poor children (21%) or poor children (20%).
  - Children with private health insurance coverage (27%) and children with public health insurance coverage (22%) were more likely to have had contact with a medical specialist than uninsured children (11%) (Figure 9).
  - Children in mother-only families (26%) were more likely to have had contact with a medical specialist than children in two-parent families (22%).
  - Differences in contact with a medical specialist by a child's age and sex were not statistically significant.



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 9. Contact with a medical specialist for children aged 5–17 years with and without basic actions difficulty, by health insurance coverage: United States, average annual estimates for 2001–2007



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 10. Contact with a therapist for children aged 5–17 years with and without basic actions difficulty, by health insurance coverage: United States, average annual estimates for 2001–2007

Contact with a therapist (Table 8)

- Children with basic actions difficulty (17%) were more likely to have had contact with a therapist (physical, speech, respiratory, or occupational therapist or audiologist) during the past 12 months than children without basic actions difficulty (4%).
- Among children with basic actions difficulty:
  - Children aged 5–11 (22%) were more likely to have had contact with a therapist than children aged 12–17 (12%).
  - There was no difference in the percentage of children having had contact with a therapist by a child's poverty status.
  - Children with health insurance coverage, private (17%) or public (19%), were more likely to have had contact with a therapist than uninsured children (9%) (Figure 10).
  - Differences in contact with a therapist by a child's sex, race or

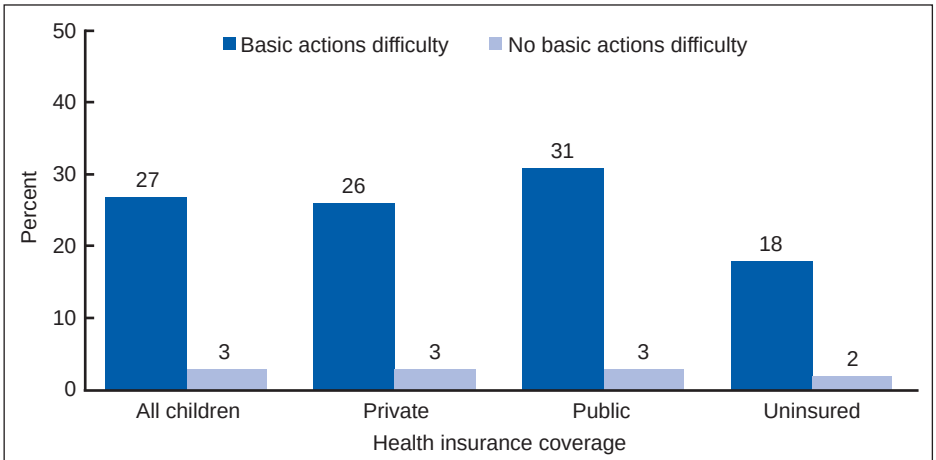
ethnicity, and family structure were not statistically significant.

Contact with a mental health professional (Table 8)

- Children with basic actions difficulty (27%) were more likely to have had contact with a mental health professional during the past 12 months than children without basic actions difficulty (3%).
- Among children with basic actions difficulty:
  - Males (28%) were more likely to have had contact with a mental health professional than females (25%).
  - Non-Hispanic white children (29%) were more likely to have had contact with a mental health professional than non-Hispanic black children (24%) or Hispanic children (22%).
  - Children in mother-only families (31%) were more likely to have had contact with a mental health professional than children in two-parent families (24%).
  - There was no difference in the percentage of children having contact with a mental health professional by a child's poverty status.
  - Children with health insurance coverage, private (26%) or public (31%), were more likely to have had contact with a mental health professional than uninsured children (18%) (Figure 11).
  - Differences in contact with a mental health professional by a child's age were not statistically significant.

Prescription medication use (Table 9)

- Children with basic actions difficulty were more likely to have used prescription medication on a regular basis during the past 3 months (39%) than children without basic actions difficulty (10%).
- Among children with basic actions difficulty:



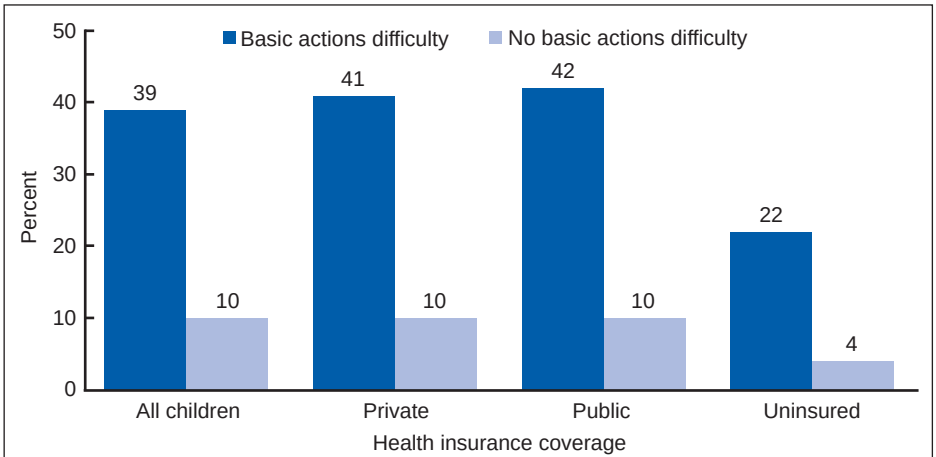
NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 11. Contact with a mental health professional for children aged 5–17 years with and without basic actions difficulty, by health insurance coverage: United States, average annual estimates for 2001–2007

  - Males (42%) were more likely to have used medication than females (35%).
  - Non-Hispanic white children (44%) were more likely to have used medication than non-Hispanic black children (33%) and Hispanic children (28%).
  - Children who were not poor (41%) were more likely to have used medication than poor children (36%).
  - Children with health insurance coverage, private (41%) and public (42%), were more likely to have used medication than uninsured children (22%) (Figure 12).
  - Differences in medication use by a child's age and family structure were not statistically significant.

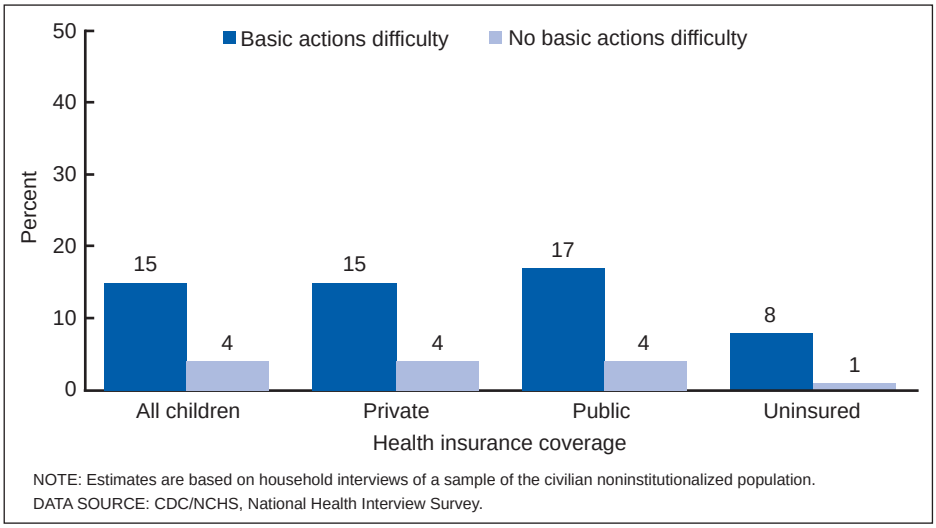
Frequent health care visits (Table 9)

- Children with basic actions difficulty were more likely to have had 10 or more health care visits during the past 12 months (15%) than children without basic actions difficulty (4%).



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 12. Medication use among children aged 5–17 years with and without basic actions difficulty, by health insurance coverage: United States, average annual esimates for 2001–2007



NOTE: Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.
DATA SOURCE: CDC/NCHS, National Health Interview Survey.

Figure 13. Frequent health care visits among children aged 5–17 years with and without basic actions difficulty, by health insurance coverage: United States, average annual estimates for 2001–2007

- Among children with basic actions difficulty:
  - Non-Hispanic white children (17%) were more likely to have had frequent health visits than non-Hispanic black children (10%) and Hispanic children (12%).
  - There was no difference in the percentage of children with frequent health care visits by a child's poverty status.
  - Children with health insurance coverage, private (15%) and public (17%), were more likely to have had frequent health care visits than uninsured children (8%) (Figure 13).
  - Differences in frequent health care visits by a child's age, sex, and family structure were not statistically significant.

Discussion

NHIS results indicate that a sizeable group of U.S. children aged 5–17 years have functional difficulties that place them at greater risk of experiencing restrictions in performing specific tasks and participating in social activities (11). From 2001 through 2007, approximately 18% of children aged 5–17 had basic actions difficulty, that is, difficulties in one or more of the following domains: sensory, movement, cognitive, or emotional or behavioral functioning. Most children with any basic actions difficulty had difficulties with either cognitive or emotional or behavioral functioning. In contrast, a small fraction of children with basic actions difficulty were reported to have sensory or movement difficulties. Although two-thirds of children with basic actions difficulty had functional problems in only one domain, more than one-quarter had difficulties involving two domains of functioning, and a small fraction had difficulties in three or more domains.

Past national estimates of the prevalence of disability among U.S. school-aged children have varied widely, with most estimates from 5%–20% (3,12,13). The reported differences in prevalence estimates are not surprising given the disparate purposes of different child disability measures. Recent estimates of child disability based on program participation vary greatly depending upon the programs' eligibility criteria. For example, special education programs mandated by the Individuals with Disabilities Education Act (IDEA) provide services to all children who have specified impairments and who need educational or related services due to their impairment. This broad-based program served approximately 6 million children aged 6–17 in 2007 (14). In contrast, the Supplemental Security Income (SSI) program, which provides income support to persons with disability, serves a smaller number of children—approximately 1 million children under 18 years in 2006 (15).

Recent survey estimates also have varied widely depending upon the questions used to identify children with impairments and functional difficulties. The 2005 Survey of Income and Program Participation (SIPP)—using questions about functional difficulties related to seeing, hearing, speaking, movement, ADL, learning, or emotional or mental conditions—estimated the prevalence of disability among children aged 6–14 to be 13% (12). In contrast, the 2007 American Community Survey (ACS), using four questions to identify sensory, physical, mental, or self-care disabilities, estimated the prevalence of any disability in children aged 5–15 to be 6% (13). Very likely both the number and specific wording of questions contributed to the difference in these estimates. A previous analysis has suggested that differences in question content and wording may have accounted for the differences observed in estimates of child disability produced by sets of questions from the disability supplement of the 1994–1995 NHIS, 1997–2000 NHIS, and 1996 SIPP (3).

The higher prevalence of basic actions difficulty compared with the prevalence of child disability estimated by other measures reflects differences in the purpose of the measures and the particular questions used to create the measures. The measure of basic actions difficulty was designed to identify a group of children at greater risk of experiencing participation restrictions. Some children with basic actions difficulty may not experience such restrictions because they have difficulties that are mild and unrestrictive, or they have assistive devices or supportive environments which allow them to engage fully in their activities. Another factor which may contribute to the relatively high prevalence of basic actions difficulty is the inclusion of several questions on cognitive and emotional or behavioral difficulties. The questions in other measures, such as the ACS measure of

child disability, cover a more restricted set of functional difficulties and do not include questions related to the emotional and behavioral problems of children.

The current results indicate that the likelihood of having functional difficulties is significantly, and, in many instances, substantially greater for particular subgroups of children. These findings parallel many of the findings about the chronic health conditions, impairments, and special health care needs reported for particular subgroups of children (16–19). Older children (aged 12–17) were more likely to have reports of basic actions difficulty than younger children (aged 5–11), possibly reflecting the emotional or behavioral difficulties of adolescence as well as the longer exposure of adolescents to the possibility of evaluation and diagnosis. Boys were more likely to have reports of basic actions difficulty than girls, while Hispanic children were less likely to have reports of basic actions difficulty than non-Hispanic children. A higher prevalence of basic actions difficulty was observed for children in mother-only families than for children in two-parent families.

Poor and near-poor children were more likely to have basic actions difficulty than children in more affluent families. Finally, the prevalence of basic actions difficulty among children with different types of health insurance coverage shows that both access to health care services and specifically public insurance coverage are associated with parental reports of functional difficulties. The higher percentage of children with basic actions difficulty among children with public health insurance, compared with children covered by private health insurance and uninsured children, may reflect the fact that some functional difficulties make a child eligible for public insurance coverage (19).

A comparison of the current findings about the demographic characteristics of children with and without basic actions difficulty shows that the characteristics of children with basic actions difficulty are similar to the characteristics reported in other surveys for children with disability. For example, Wells and Hogan (3) described a similar pattern in the demographic characteristics of children who were identified as having an activity limitation in the 1994–1995 NHIS disability supplement, 1997–2000 NHIS, and 1996 SIPP. The percentage of children with an activity limitation was higher among boys compared with girls, non-Hispanic children compared with Hispanic children, and children in low-income families compared with children in more affluent families. Additionally, Fujiura and Kamaki (20), using data from the 1996 NHIS, reported a higher prevalence of disability among poor children and children living in single-parent families. Using data from the 2002 wave of the National Survey of America's Families, Parish et al. (21) updated the earlier findings of Fujiura and Kamaki, showing that a strong association persists between child disability and poverty. They also documented in more detail the material hardships experienced by children with disabilities.

Not unexpectedly, children with and without basic actions difficulty differ greatly in their use of educational services. NHIS data show that 33% of children with basic actions difficulty use special education services compared with 2% of children without basic actions difficulty. Because special education programs are mandated to serve the needs of children with disabilities, the large difference in the use of these services was expected. What is probably of greater interest is the substantial fraction of children with basic actions difficulty who did not receive these services. Some of these children may receive school accommodations available from other programs or use health care or other services that support their participation in school activities. Others may not experience limitations in their ability to participate in academic and other school activities. Finally, some children with basic actions difficulty may have unmet needs for school-related services.

Among children with basic actions difficulty, the use of special education services is significantly, although in most cases modestly, associated with a child's demographic and socioeconomic characteristics. Male children, poor children, and children with public health insurance were more likely to use special education services. These differences may indicate the greater severity of difficulties of these groups of children. The greater use of these services by poor children with basic actions difficulty suggests that low family income was not a barrier to the use of these services.

Children with and without basic actions difficulty differed greatly in their use of health care services. Compared with children without difficulties, a larger percentage of children with basic actions difficulty were reported to have contact with a medical specialist, therapist, or mental health professional. A larger percentage of children with basic actions difficulty were also reported to regularly use prescription medication and to have visited a health care provider 10 or more times during the past 12 months. Among children with basic actions difficulty, each of these measures of health care use was significantly and strongly associated with a child's health insurance coverage. Children with either public or private health insurance coverage were more likely to report use of these services than children with no health insurance coverage.

Several other studies of children with disabilities have reported greater use of educational and health care services by children with disability compared with children without disability. Newacheck, et al. (22), using data from the 1999–2000 Medical Expenditure Panel Survey, demonstrated that children who have limitations in school activities or who receive special education services used more health care services than children who do not have limitations or receive special education services. Similarly, Boulet, et al. (23), using data from the 1997–2005 NHIS, showed that children with developmental disabilities were more likely to use a variety of health care services, including prescription medication, special equipment, frequent health care visits, and recent visits to medical specialists, mental health

professionals, or therapists. A review of the findings in past reports on the positive association between child disability and health care use suggests that this relationship is quite robust and is not greatly affected by the way child disability is measured.

Strengths and limitations

The large, nationally representative sample of children used to generate the estimates of basic actions difficulty is a major strength of this report. Combining data from 7 years of NHIS makes it possible to estimate not only the prevalence of any basic actions difficulty, but also the prevalence of difficulties in particular domains of functioning. However, a number of important limitations stem from using the existing NHIS questions for children to construct a measure of basic actions difficulty. Ideally, the questions used for a measure of basic actions difficulty would measure functional difficulties in a wide range of domains. Because the NHIS questions for children were not specifically designed to measure basic actions difficulty, only a few questions about functioning are available. In the domain of cognitive functioning, it was necessary to use parental reports of diagnosed conditions such as mental retardation and learning disability as proxy measures for functional difficulties. An examination of NHIS data also suggests that the current operational definition of basic actions difficulty in children has gaps. Because NHIS does not include any questions about the communication difficulties of children, this domain of difficulties is not captured in the current measure. The importance of speech problems as the major reason for receiving special education services among children who do not have any basic actions difficulty is further evidence suggesting that a question about communication difficulties would improve the measurement of basic actions difficulty in children.

Other limitations of the current report include the use of data reported only by parents. Parents play an important role in children's lives, but they may be unaware of some of the functional difficulties that their children experience. A parent's assessment of a child's mental disorders may not provide a complete report of the child's emotional or behavior difficulties (24). Having reports from both children and adults would most likely improve the measurement of basic actions difficulty. Additionally, having questions specially tailored for children of different ages would improve the accuracy of survey reports about the functional difficulties of school-aged children as they transition through childhood into young adulthood. Finally, the cross-sectional nature of the data collected in NHIS precludes determining causal links between functional difficulties and a number of risk factors. Because data are not collected about changes in the functional difficulties of individual children over time, tracing the development or resolution of functional difficulties as children age is not possible.

Conclusion

The basic actions difficulty measure presented in this report identifies a brief set of questions that describes the current state of functional difficulties in U.S. school-aged children. By showing that functional difficulties are a problem for a sizeable number of children, and that important disparities exist in the basic actions difficulty of children with different demographic and socioeconomic characteristics, this report provides a broad context for examining the current policies and programs available for children with disabilities. The findings of this report also suggest a number of topics which could be explored in future research: development of questions about the functional difficulties of children of different ages; inclusion of additional domains, such as communication; development of a measure that gauges how functional difficulties affect children's ability to perform complex activities and a range of social roles; and development of a measure that describes the extent to which physical and social environments either restrict or support the activities of children with functional difficulties.

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Table 1. Questions measuring functional difficulties of children, by selected domain of functioning: National Health Interview Survey, 2001–2007

Domain and topic	Question	Response categories	Questionnaire
Sensory			
Hearing	Which statement best describes {sample child name}'s hearing without a hearing aid:	Good, a little trouble, ***a lot of trouble, or deaf?***	Sample Child Core
Seeing	Does {sample child name} have any trouble seeing even when wearing glasses or contact lenses?	***Yes***, no	Sample Child Core
Movement			
Walking	Because of a health problem, does {anyone in the family} have difficulty walking without using any special equipment?	***Yes***, no	Family Core
Walking, running, playing	Does {sample child name} have an impairment or health problem that limits {his/her} ability to (crawl), walk, run, or play?	***Yes***, no	Sample Child Core
Cognitive			
Remembering	Is {anyone in the family} limited in any way because of difficulty remembering or because {you/they} experience periods of confusion?	***Yes***, no	Family Core
Mental retardation, Down syndrome, autism	Has a doctor or health professional ever told you that {sample child name} had:		Sample Child Core
	. . . Mental retardation?	***Yes***, no	
	Looking at this list, has a doctor or other health professional ever told you that {sample child name} had any of these conditions?		Sample Child Core
	. . . Down syndrome?	***Yes***, no	
	. . . Autism?	***Yes***, no	
Learning disability	Has a representative from a school or a health professional ever told you that {sample child name} had a learning disability?	***Yes***, no	Sample Child Core
Emotional or behavioral			
Overall difficulties (definite, severe)	Overall, do you think that {sample child name} has difficulties in any of the following areas:		Sample Child Core
	Emotions, concentration, behavior, or being able to get along with other people?	No; yes, minor; ***yes, definite; yes, severe***	
ADHD	Has a doctor or health professional ever told you that {sample child name} had:		Sample Child Core
	. . . Attention deficit hyperactivity disorder (ADHD) or attention deficit disorder (ADD)?	***Yes***, no	

NOTES: Response categories that indicate functional difficulty are shown in bold-italic type. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 2. Selected population and prevalence estimates of basic actions difficulty among children aged 5–17 years, by selected functional domains and their components: United States, average annual estimates for 2001–2007

	Population estimate (millions)	Percent (standard error)
Any basic actions difficulty	9.4	17.7 (0.2)
Functional domains and components		
Sensory	1.8	3.3 (0.1)
Seeing	. . .	2.9 (0.1)
Hearing	. . .	0.4 (0.0)
Movement	1.1	2.1 (0.1)
Walking	. . .	0.3 (0.0)
Walking, running, playing	. . .	2.1 (0.1)
Cognitive	4.7	8.8 (0.2)
Remembering	. . .	0.4 (0.0)
Mental retardation, Down syndrome, autism	. . .	1.3 (0.1)
Learning disability	. . .	8.4 (0.2)
Emotional or behavioral	5.5	10.3 (0.2)
Serious overall emotional or behavioral difficulty	. . .	5.2 (0.1)
ADHD[1]	. . .	7.8 (0.1)

. . . Not applicable.

[1]Attention deficit hyperactivity disorder.

NOTES: The population estimate used to calculate the number of children with basic actions difficulty and difficulty in specific domains is the total, average annual number of children aged 5–17 in the population during 2001–2007 and includes children who have missing data on basic actions difficulty. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 3. Prevalence estimates of basic actions difficulty among children aged 5–17 years, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Percent (standard error)	*P* value[1]
Total	17.7 (0.2)	. . .
Age (years)	. . .	<0.01
5–11	15.2 (0.3)	. . .
12–17	20.5 (0.3)	. . .
Sex	. . .	<0.01
Male	21.6 (0.3)	. . .
Female	13.7 (0.3)	. . .
Race and Hispanic origin[2]	. . .	<0.01
White only, not Hispanic	18.9 (0.3)	. . .
Black only, not Hispanic	19.0 (0.5)	. . .
Hispanic	14.2 (0.4)	. . .
Family structure[3]	. . .	<0.01
Mother only	23.5 (0.5)	. . .
Two parent	15.4 (0.2)	. . .
Poverty status[4]	. . .	<0.01
Poor	22.5 (0.5)	. . .
Near poor	19.4 (0.5)	. . .
Not poor	15.7 (0.2)	. . .
Heath insurance[5]	. . .	<0.01
Private	15.6 (0.2)	. . .
Public	24.6 (0.5)	. . .
Uninsured	16.0 (0.6)	. . .

. . . Not applicable.

[1]Calculated for a Wald log-linear chi-square test.

[2]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[3]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[5]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 4. Prevalence estimates of basic actions difficulty in selected functional domains among children aged 5–17 years, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Sensory		Movement		Cognitive		Emotional or behavioral	
	Percent (standard error)	*P* value[1]	Percent (standard error)	*P* value[1]	Percent (standard error)	*P* value[1]	Percent (standard error)	*P* value[1]
Total	3.3 (0.1)	. . .	2.1 (0.1)	. . .	8.8 (0.2)	. . .	10.3 (0.2)	. . .
Age (years)	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
5–11	2.8 (0.1)	. . .	1.7 (0.1)	. . .	7.4 (0.2)	. . .	8.5 (0.2)	. . .
12–17	3.7 (0.2)	. . .	2.6 (0.1)	. . .	10.3 (0.2)	. . .	12.2 (0.3)	. . .
Sex	. . .	0.07	. . .	0.97	. . .	<0.01	. . .	<0.01
Male	3.4 (0.1)	. . .	2.1 (0.1)	. . .	11.0 (0.2)	. . .	13.6 (0.2)	. . .
Female	3.1 (0.1)	. . .	2.1 (0.1)	. . .	6.4 (0.2)	. . .	6.7 (0.2)	. . .
Race and Hispanic origin[2]	. . .	0.06	. . .	0.03	. . .	<0.01	. . .	<0.01
White only, not Hispanic	3.1 (0.1)	. . .	2.2 (0.1)	. . .	9.3 (0.2)	. . .	11.4 (0.2)	. . .
Black only, not Hispanic	3.8 (0.3)	. . .	2.3 (0.2)	. . .	9.7 (0.4)	. . .	11.0 (0.4)	. . .
Hispanic	3.4 (0.2)	. . .	1.8 (0.1)	. . .	7.3 (0.3)	. . .	6.7 (0.3)	. . .
Family structure[3]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
Mother only	4.4 (0.2)	. . .	2.9 (0.2)	. . .	11.9 (0.4)	. . .	14.3 (0.4)	. . .
Two parent	2.9 (0.1)	. . .	1.9 (0.1)	. . .	7.6 (0.2)	. . .	8.5 (0.2)	. . .
Poverty status[4]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
Poor	4.7 (0.3)	. . .	3.3 (0.2)	. . .	12.2 (0.4)	. . .	12.7 (0.5)	. . .
Near poor	3.9 (0.2)	. . .	2.5 (0.2)	. . .	9.4 (0.4)	. . .	11.1 (0.4)	. . .
Not poor	2.6 (0.1)	. . .	1.7 (0.1)	. . .	7.6 (0.2)	. . .	9.3 (0.2)	. . .
Heath insurance[5]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
Private	2.8 (0.1)	. . .	1.8 (0.1)	. . .	7.4 (0.2)	. . .	9.0 (0.2)	. . .
Public	4.3 (0.2)	. . .	3.4 (0.2)	. . .	13.5 (0.4)	. . .	14.9 (0.4)	. . .
Uninsured	4.0 (0.3)	. . .	1.6 (0.2)	. . .	7.1 (0.4)	. . .	8.3 (0.4)	. . .

. . . Not applicable.

[1]Calculated for a Wald log-linear chi-square test.

[2]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[3]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[5]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 5. Prevalence estimates of basic actions difficulty in one domain and more than one domain among children aged 5–17 years, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	One domain		More than one domain	
	Percent (standard error)	*P* value[1]	Percent (standard error)	*P* value[1]
Total	11.9 (0.2)	. . .	5.8 (0.1)	. . .
Age (years)	. . .	<0.01	. . .	<0.01
5–11	10.7 (0.2)	. . .	4.5 (0.2)	. . .
12–17	13.3 (0.3)	. . .	7.2 (0.2)	. . .
Sex	. . .	<0.01	. . .	<0.01
Male	14.1 (0.3)	. . .	7.5 (0.2)	. . .
Female	9.6 (0.2)	. . .	4.0 (0.2)	. . .
Race and Hispanic origin[2]	. . .	<0.01	. . .	<0.01
White only, not Hispanic	12.6 (0.2)	. . .	6.3 (0.2)	. . .
Black only, not Hispanic	12.4 (0.5)	. . .	6.6 (0.3)	. . .
Hispanic	10.2 (0.3)	. . .	4.1 (0.2)	. . .
Family structure[3]	. . .	<0.01	. . .	<0.01
Mother only	15.1 (0.4)	. . .	8.4 (0.3)	. . .
Two parent	10.7 (0.2)	. . .	4.7 (0.1)	. . .
Poverty status[4]	. . .	<0.01	. . .	<0.01
Poor	14.2 (0.4)	. . .	8.4 (0.4)	. . .
Near poor	13.1 (0.4)	. . .	6.2 (0.3)	. . .
Not poor	10.9 (0.2)	. . .	4.9 (0.1)	. . .
Heath insurance[5]	. . .	<0.01	. . .	<0.01
Private	10.9 (0.2)	. . .	4.7 (0.1)	. . .
Public	15.2 (0.4)	. . .	9.4 (0.3)	. . .
Uninsured	11.5 (0.5)	. . .	4.4 (0.3)	. . .

. . . Not applicable.

[1]Calculated for a Wald log-linear chi-square test.

[2]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[3]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[5]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 6. Limitation in activities of daily living among U.S. children aged 5–17 years with basic actions difficulty, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Percent (standard error)	*p* value[1]
Total	2.9 (0.2)	. . .
Age (years)	. . .	<0.01
5–11	3.8 (0.4)	. . .
12–17	2.1 (0.2)	. . .
Sex	. . .	0.73
Male	2.8 (0.3)	. . .
Female	3.0 (0.3)	. . .
Race and Hispanic origin[2]	. . .	0.04
White only, not Hispanic	2.6 (0.3)	. . .
Black only, not Hispanic	2.4 (0.5)	. . .
Hispanic	3.9 (0.5)	. . .
Family structure[3]	. . .	0.55
Mother only	2.7 (0.3)	. . .
Two parent	3.0 (0.3)	. . .
Poverty status[4]	. . .	0.39
Poor	3.0 (0.5)	. . .
Near poor	3.4 (0.5)	. . .
Not poor	2.6 (0.3)	. . .
Heath insurance[5]	. . .	<0.01
Private	2.3 (0.2)	. . .
Public	4.4 (0.5)	. . .
Uninsured	*1.3 (0.6)	. . .

. . . Not applicable.

* Estimates have a relative standard error greater than 30% and do not meet standards of reliability or precision.

[1]Calculated for a Wald log-linear chi-square test.

[2]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[3]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[5]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 7. Current use of special education services among children aged 5–17 years with and without basic actions difficulty, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Basic actions difficulty		No basic actions difficulty	
	Percent (standard error)	*p* value[1]	Percent (standard error)	*p* value[1]
Total	33.4 (0.6)	. . .	1.9 (0.1)	. . .
Age (years)	. . .	0.06	. . .	<0.01
5–11	34.6 (0.9)	. . .	2.4 (0.1)	. . .
12–17	32.4 (0.8)	. . .	1.2 (0.1)	. . .
Sex	. . .	<0.01	. . .	<0.01
Male	35.4 (0.7)	. . .	2.4 (0.1)	. . .
Female	30.1 (0.9)	. . .	1.3 (0.1)	. . .
Race and Hispanic origin[2]	. . .	0.08	. . .	<0.01
White only, not Hispanic	33.1 (0.8)	. . .	2.1 (0.1)	. . .
Black only, not Hispanic	36.4 (1.5)	. . .	1.5 (0.2)	. . .
Hispanic	32.5 (1.3)	. . .	1.4 (0.1)	. . .
Family structure[3]	. . .	<0.01	. . .	0.96
Mother only	36.9 (1.1)	. . .	1.8 (0.2)	. . .
Two parent	31.8 (0.7)	. . .	1.9 (0.1)	. . .
Poverty status[4]	. . .	<0.01	. . .	0.04
Poor	38.0 (1.3)	. . .	1.9 (0.2)	. . .
Near poor	34.8 (1.3)	. . .	2.3 (0.2)	. . .
Not poor	30.9 (0.7)	. . .	1.7 (0.1)	. . .
Heath insurance[5]	. . .	<0.01	. . .	0.11
Private	30.4 (0.7)	. . .	1.8 (0.1)	. . .
Public	41.0 (1.1)	. . .	2.2 (0.2)	. . .
Uninsured	26.4 (1.7)	. . .	1.9 (0.3)	. . .

. . . Not applicable.

[1]Calculated for a Wald log-linear chi-square test.

[2]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[3]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[5]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 8. Health care contacts for children aged 5–17 years with and without basic action difficulty, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Medical specialist[1]				Therapist[1]				Mental health professional[1]			
	Basic actions difficulty		No basic actions difficulty		Basic actions difficulty		No basic actions difficulty		Basic actions difficulty		No basic actions difficulty	
	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]
Total	24.1 (0.5)	. . .	11.0 (0.2)	. . .	16.5 (0.5)	. . .	3.6 (0.1)	. . .	26.8 (0.6)	. . .	3.2 (0.1)	. . .
Age (years)	. . .	0.82	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	0.84	. . .	<0.01
5–11	23.9 (0.8)	. . .	9.8 (0.2)	. . .	22.2 (0.8)	. . .	3.9 (0.2)	. . .	26.9 (0.8)	. . .	2.7 (0.1)	. . .
12–17	24.2 (0.8)	. . .	12.6 (0.3)	. . .	11.7 (0.5)	. . .	3.2 (0.1)	. . .	26.7 (0.8)	. . .	3.7 (0.2)	. . .
Sex	. . .	0.65	. . .	0.10	. . .	0.08	. . .	<0.01	. . .	<0.01	. . .	<0.01
Male	23.9 (0.6)	. . .	11.3 (0.3)	. . .	17.1 (0.6)	. . .	4.2 (0.2)	. . .	27.9 (0.7)	. . .	2.9 (0.1)	. . .
Female	24.4 (0.9)	. . .	10.7 (0.3)	. . .	15.4 (0.8)	. . .	3.0 (0.1)	. . .	24.9 (0.9)	. . .	3.4 (0.1)	. . .
Race and Hispanic origin[3]	. . .	<0.01	. . .	<0.01	. . .	0.12	. . .	<0.01	. . .	<0.01	. . .	<0.01
White only, not Hispanic	26.9 (0.7)	. . .	13.6 (0.3)	. . .	17.0 (0.6)	. . .	4.4 (0.2)	. . .	28.5 (0.7)	. . .	3.8 (0.1)	. . .
Black only, not Hispanic	16.4 (1.2)	. . .	7.1 (0.4)	. . .	15.2 (1.1)	. . .	2.5 (0.2)	. . .	23.5 (1.3)	. . .	2.1 (0.2)	. . .
Hispanic	19.6 (1.1)	. . .	6.7 (0.3)	. . .	14.9 (1.0)	. . .	2.3 (0.2)	. . .	21.9 (1.2)	. . .	2.0 (0.2)	. . .
Family structure[4]	. . .	<0.01	. . .	<0.01	. . .	0.63	. . .	0.04	. . .	<0.01	. . .	<0.01
Mother only	21.8 (0.9)	. . .	9.2 (0.3)	. . .	16.6 (0.8)	. . .	3.2 (0.2)	. . .	30.9 (1.1)	. . .	5.1 (0.3)	. . .
Two parent	25.9 (0.7)	. . .	11.8 (0.2)	. . .	17.1 (0.6)	. . .	3.7 (0.1)	. . .	23.9 (0.7)	. . .	2.4 (0.1)	. . .
Poverty status[5]	. . .	<0.01	. . .	<0.01	. . .	0.74	. . .	<0.01	. . .	0.92	. . .	<0.01
Poor	20.1 (1.2)	. . .	7.1 (0.4)	. . .	17.2 (1.1)	. . .	2.6 (0.2)	. . .	26.9 (1.3)	. . .	2.6 (0.2)	. . .
Near poor	21.3 (1.1)	. . .	7.9 (0.4)	. . .	16.1 (1.1)	. . .	3.1 (0.2)	. . .	26.3 (1.2)	. . .	2.9 (0.2)	. . .
Not poor	26.9 (0.7)	. . .	13.1 (0.3)	. . .	16.4 (0.6)	. . .	4.0 (0.1)	. . .	26.9 (0.7)	. . .	3.4 (0.1)	. . .
Heath insurance[6]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
Private	27.0 (0.7)	. . .	13.0 (0.2)	. . .	16.6 (0.6)	. . .	4.0 (0.1)	. . .	25.6 (0.7)	. . .	3.3 (0.1)	. . .
Public	22.3 (0.9)	. . .	8.0 (0.3)	. . .	18.7 (0.9)	. . .	3.1 (0.2)	. . .	31.4 (1.1)	. . .	3.4 (0.2)	. . .
Uninsured	11.0 (1.2)	. . .	4.2 (0.3)	. . .	8.7 (1.1)	. . .	1.7 (0.2)	. . .	18.1 (1.5)	. . .	2.0 (0.2)	. . .

. . . Not applicable.

[1]See health service terms in "Technical Notes."

[2]Calculated for a Wald log-linear chi-square test.

[3]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[5]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[6]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

Table 9. Use of prescription medication and frequent health care visits among children aged 5–17 years with and without basic action difficulty, by selected characteristics: United States, average annual estimates for 2001–2007

Characteristic	Prescription medication[1]				Frequent health care visits[1]			
	Basic actions difficulty		No basic actions difficulty		Basic actions difficulty		No basic actions difficulty	
	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]	Percent (standard error)	*p* value[2]
Total	39.4 (0.6)	. . .	9.5 (0.2)	. . .	15.0 (0.5)	. . .	3.5 (0.1)	. . .
Age (years)	. . .	0.94	. . .	<0.01	. . .	0.19	. . .	<0.01
5–11	39.4 (0.9)	. . .	8.3 (0.2)	. . .	15.7 (0.7)	. . .	3.2 (0.1)	. . .
12–17	39.5 (0.8)	. . .	10.9 (0.3)	. . .	14.5 (0.6)	. . .	3.9 (0.2)	. . .
Sex	. . .	<0.01	. . .	0.40	. . .	0.59	. . .	<0.01
Male	41.9 (0.8)	. . .	9.7 (0.2)	. . .	14.8 (0.6)	. . .	3.1 (0.1)	. . .
Female	35.3 (1.0)	. . .	9.4 (0.2)	. . .	15.3 (0.8)	. . .	3.9 (0.2)	. . .
Race and Hispanic origin[3]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
White only, not Hispanic	43.8 (0.8)	. . .	11.1 (0.3)	. . .	17.1 (0.6)	. . .	4.3 (0.2)	. . .
Black only, not Hispanic	32.7 (1.4)	. . .	8.5 (0.4)	. . .	9.6 (0.9)	. . .	2.1 (0.2)	. . .
Hispanic	28.1 (1.3)	. . .	5.9 (0.3)	. . .	12.0 (0.9)	. . .	2.4 (0.2)	. . .
Family structure[4]	. . .	0.45	. . .	0.14	. . .	0.40	. . .	0.08
Mother only	38.9 (1.1)	. . .	10.1 (0.4)	. . .	15.9 (0.8)	. . .	3.9 (0.2)	. . .
Two parent	40.0 (0.8)	. . .	9.5 (0.2)	. . .	15.1 (0.6)	. . .	3.5 (0.1)	. . .
Poverty status[5]	. . .	<0.01	. . .	<0.01	. . .	0.89	. . .	0.03
Poor	35.8 (1.3)	. . .	8.0 (0.4)	. . .	15.3 (1.1)	. . .	3.2 (0.3)	. . .
Near poor	39.4 (1.3)	. . .	8.0 (0.4)	. . .	14.6 (1.0)	. . .	3.1 (0.2)	. . .
Not poor	40.9 (0.8)	. . .	10.4 (0.2)	. . .	15.1 (0.6)	. . .	3.7 (0.1)	. . .
Heath insurance[6]	. . .	<0.01	. . .	<0.01	. . .	<0.01	. . .	<0.01
Private	40.8 (0.8)	. . .	10.4 (0.2)	. . .	14.9 (0.6)	. . .	3.7 (0.1)	. . .
Public	42.0 (1.2)	. . .	9.5 (0.4)	. . .	17.1 (0.9)	. . .	3.9 (0.2)	. . .
Uninsured	21.9 (1.7)	. . .	4.2 (0.3)	. . .	8.4 (1.1)	. . .	1.4 (0.2)	. . .

. . . Not applicable.

[1]See health service terms in "Technical Notes."

[2]Calculated for a Wald log-linear chi-square test.

[3]Children of Hispanic origin may be of any race. Data are not shown for non-Hispanic children of other races due to small sample size. Non-Hispanic children of other races are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[4]Mother and father refer to biological, adoptive, step-, and foster parents. Data are not shown for children in other types of families due to small sample size. Children living in other types of families are included in "total" and the categories for other characteristics. Chi-square test is based on the categories shown.

[5]Based on income and family size using the U.S. Census Bureau's poverty thresholds. "Poor" persons have incomes below the poverty threshold. "Near poor" persons have incomes 100% to less than 200% of the poverty threshold. "Not poor" persons have incomes 200% of the poverty threshold or greater.

[6]Classification of 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.

NOTES: The denominators for statistics shown exclude children with unknown information for basic actions difficulty. Percentage for "total" includes children who have unknown values for any of the selected characteristics. Estimates are based on household interviews of a sample of the civilian noninstitutionalized population.

DATA SOURCE: CDC/NCHS, National Health Interview Survey, 2001–2007.

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. NHIS uses a multistage, clustered sample design to produce national estimates for a variety of health indicators. Information on basic health topics is collected for all household members. Additional information is collected for one randomly selected adult and, for families with children under age 18, one randomly selected child in each family. A household adult knowledgeable about the health of the sample child is the respondent for the sample child. Interviews are conducted in the home by field staff from the U.S. Census Bureau using a computer-assisted personal interview, known as CAPI, with telephone interviewing permitted for follow-up if necessary.

Starting in 2006, the sample design included Asian persons in the oversampling of NHIS populations; during 2001–2005, only households with black and Hispanic persons were oversampled.

Item nonresponse

From 2001 through 2007, item nonresponse for each of the demographic indicators for children aged 5–17 years shown in this report was generally less than 1%, with the exception of poverty status, which is based on detailed family income ascertained from the family component of the questionnaire. Because the item nonresponse for the poverty status variable for children aged 5–17 was relatively high (22%–31% from 1997 through 2007), family income data were imputed for families with missing values (25). Item nonresponse related to limitations in activities of daily living, use of special education services, and use of health care services was 0.5% or less. The denominators for statistics shown in the tables exclude persons with unknown information about basic actions difficulty for a given table. Among 58,679 sample children aged 5–17 in the 2001–2007 NHIS, 1,069 children, or 2%, were missing data for basic actions difficulty.

Tests of significance

Statistical tests performed to assess the significance of differences in estimates were two-tailed with no adjustments for multiple comparisons. The statistic used to determine statistical significance in contingency tables was the Wald log linear chi-square test at the 0.05 level of significance. The test statistic used to determine statistical significance of differences between two percentages was

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

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

Relative standard error

Estimates with a relative standard error (RSE) more than 30% but less than or equal to 50% are identified with an asterisk (*). The RSE of an estimate is calculated as:

$$\text{RSE (percent)} = (S_{est}/\text{Est}) * 100$$

where S_{est} is the standard error of the estimate and Est is the estimate.

Definition of terms

Demographic and socioeconomic terms

Age—Recorded for each person as of his or her last birthday.

Family structure—For each child in the sample, respondents were asked whether the mother was a household member and whether the father was a household member. Mother and father can include biological, adoptive, stepparent, and foster relationships. This recode does not classify legal guardians as parents. A mother-only family refers to a family in which a mother, but not a father, is a household member. A two-parent family refers to a family in which both the mother and father are household members.

Health insurance coverage—NHIS respondents at the time of the interview reported whether they were covered by private health insurance (obtained through the employer or workplace, purchased directly, or acquired through a local or community program), Medicare, Medigap (supplemental Medicare coverage), Medicaid, Children's Health Insurance Program (CHIP), Indian Health Service (IHS), military insurance (including VA, TRICARE, or CHAMP-VA), a state-sponsored health plan, another government program, or any single-service plans. This information was used to form a health insurance hierarchy that consisted of three mutually exclusive categories. Persons with more than one type of health insurance were assigned to the first appropriate category in the following hierarchy: private coverage (includes persons with military coverage and those covered by another government program), public coverage (includes Medicaid, CHIP, and other related state-sponsored health plans), and uninsured (also includes persons who are covered only by IHS or have only single-service plans).

Hispanic or Latino origin—Includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or Spanish origins. Persons of Hispanic or Latino origin may be of any race.

Poverty status—Based on family income and family size using the U.S. Census Bureau's poverty thresholds. ''Poor'' persons are defined as those with family incomes below the poverty threshold. Persons who are ''near poor'' have family incomes of 100% to less than 200% of the poverty threshold, and persons who are ''not poor'' have family incomes that are 200% of the poverty threshold or greater.

Race and Hispanic origin—The reporting of race conforms with the 1997 Office of Management and Budget's Race and Ethnic Standards for

Federal Statistics and Administrative Reporting. In this report, three categories are shown: non-Hispanic white, non-Hispanic black, and Hispanic of any race. Other racial categories, including a multiple-race category, are not shown due to the small number of sample children in these categories.

Disability-related terms

Basic actions—The volitional physical and mental operations at the level of the whole person. Examples include walking, climbing steps, reading, and communicating. Basic actions are distinct from body functions, which are defined in the International Classification of Functioning and Health (ICF) as ''physiological functions of body systems'' rather than functions of the whole person. The level of basic action functioning can be measured with or without the use of assistive devices.

Complex activities—The execution of specific tasks and organized activities that make up the elements of a social role, ranging from personal care activities to going to school or socializing with peers.

Condition—A health condition is a departure from a state of physical or mental well-being.

Difficulties or limitations—Bounds, restraints, or restrictions that a person experiences when attempting to perform basic actions, tasks, or complex activities in everyday life situations.

Disability—An umbrella term that reflects the interaction of a person with his or her environment resulting in some form of limitation in actions or participation.

Impairment—Any loss or abnormality of psychological, physiological, or anatomical structure or function. It represents the exterior manifestation of an abnormality in the body and reflects ongoing or residual disturbances at the organ level. An impairment may be either temporary or permanent.

Limitation in activities of daily living (ADL)—Activities of daily living include bathing, eating, dressing, getting in or out of a bed or chair, using the toilet, or getting around inside the home. Persons are limited in ADL if they require the help of other persons with any of these activities due to a physical, mental, or emotional problem.

Special education—Teaching that is designed to meet the needs of a child with special needs or disabilities. It is funded by the public school system and may take place at a regular school, special school, private school, home, or hospital. The respondent for children in the NHIS is asked if the child currently receives special education services.

Health service terms

Contact with a mental health professional—Based on a question that asked whether respondents, during the past 12 months, had seen or talked to a mental health care provider about the sample child's health. Providers included psychiatrists, psychologists, psychiatric nurses, or clinical social workers.

Contact with a medical specialist—Based on a question that asked whether respondents, during the past 12 months, had seen or talked to a medical specialist about the sample child's health. Medical specialists included medical doctors who specialize in a particular medical disease or problem (other than an obstetrician/gynecologist, psychiatrist, or ophthalmologist).

Contact with a therapist—Based on a question that asked whether respondents, during the past 12 months, had seen or talked to a therapist about the sample child's health. Therapists included physical, speech, respiratory, or occupational therapists, or audiologists.

Prescription medication—Based on a question that asked the respondent whether the sample child currently has a problem for which he or she has regularly taken prescription medication for at least three months.

Frequent health care visits—Constituting 10 or more visits during the previous 12-month period. The respondent for the sample child was asked how many times, during the past 12 months, the child had been seen by a doctor or other health care professional about his or her health at a doctor's office, a clinic, or some other place. Respondents were instructed not to include overnight hospitalizations, visits to the hospital emergency room, home visits, telephone calls, or dental visits.

Suggested citation

Pastor PN, Reuben CA, Loeb M. Functional difficulties among school-aged children: United States, 2001–2007. National health statistics reports; no 19. Hyattsville, MD: National Center for Health Statistics. 2009.

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DHHS Publication No. (PHS) 2010-1250
CS206675
T35321 (11/2009)

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