

6. CERTAIN MENTAL HEALTH AND BEHAVIORAL PROBLEMS

The following section contains: definitions of certain types of mental health and behavioral problems; prevalence, with a focus on disparities; the unmet need for services; the learning consequences of mental health and behavioral problems; and a special section on ADHD, given its prevalence and strong evidence of impact on learning.

Definitions

Mental disorders are described as serious changes in the ways children typically learn, behave, or handle their emotions.²¹¹ The most common mental health problems in children aged 3 to 17 years are attention deficit disorders, behavioral problems, anxiety, and depression.²¹²

Attention deficit and behavioral disorders, such as Oppositional Defiant Disorder (ODD) and Conduct Disorders, are externalizing disorders, which refers to a grouping of behavior problems that are expressed in children's outward behavior and characterized by the child negatively acting on his/her external environment.²¹³ Definitions of the following behavioral problems are taken from a CDC surveillance report on mental health disorders in children.²¹⁴ Children with ADHD have "levels of inattention, hyperactivity, impulsivity, or a combination of these that are inappropriate for their stage of development and impair their functioning in multiple settings" (*see Section 8.3 for detailed description of ADHD*). Children with ODD have "a pattern of developmentally inappropriate, negative, aggressive, and defiant behavior that occurs for at least 6 months." They "frequently lose their temper, argue with adults, defy or refuse to comply with rules and requests, deliberately annoy others, blame their behavior on others, are easily annoyed, and are spiteful or vindictive." Children with conduct disorder "consistently ignore the basic rights of others and violate social norms and rules." To meet criteria for conduct disorder, children must have displayed three or more behaviors, such as "aggression to persons and animals, destruction of property, deceitfulness or theft, and serious violations of rules" in the past 12 months, with at least one behavior shown in the past 6 months. When occurring with ADHD, ODD and Conduct Disorder often predict later antisocial personality disorder, psychoactive substance use disorders, smoking, and bipolar disorder.

Anxiety and depression, on the other hand, can be grouped together as internalizing disorders that affect the child's internal psychological environment rather than the external world.²¹⁵ Definitions of anxiety and depression are taken from the US federal government agency Substance Abuse and Mental Health Services Administration. Depression is characterized by "a sad, hopeless, empty, or irritable mood, and somatic and cognitive changes that significantly interfere with daily life." A major depressive disorder (MDD) is defined as "having a depressed mood for most of the day and a marked loss of interest or pleasure, among other symptoms present nearly every day for at least a two-week period." Anxiety disorders are characterized by "excessive fear or anxiety that is difficult to control and negatively and substantially impacts daily functioning." These disorders can "range from specific fears (called phobias) to more generalized feelings of worry and tension."²¹⁶

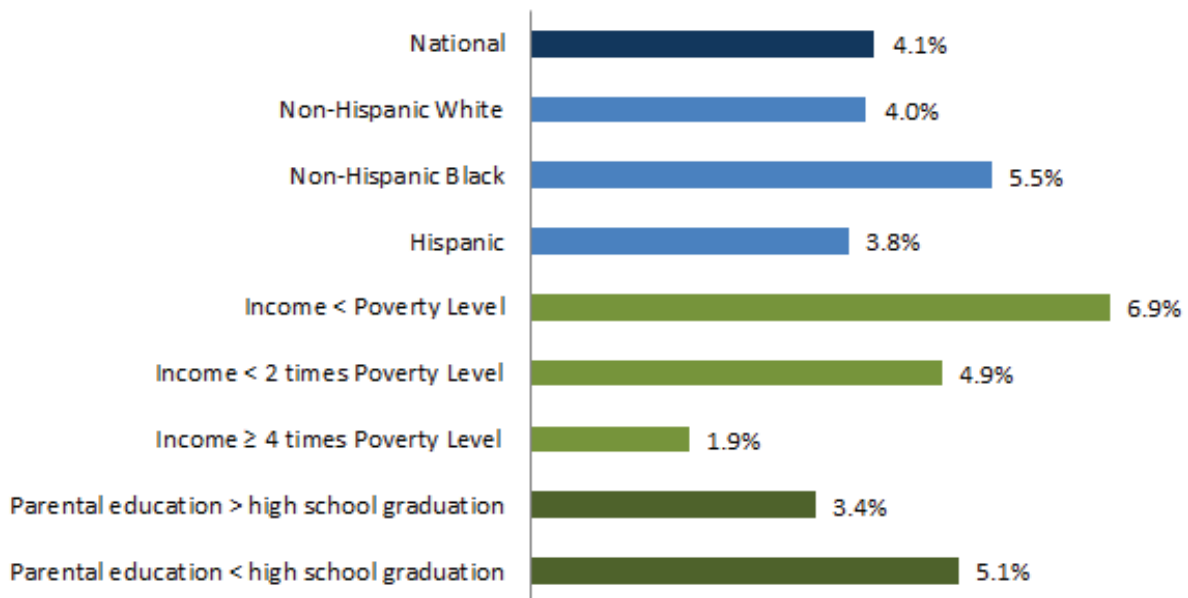
Prevalence

According to a CDC report, a total of 13% to 20% of children aged 3 to 17 years living in the United States experience a mental disorder in a given year. These include internalizing and externalizing disorders, as well as other disorders such as Tourette syndrome, or autism spectrum disorders.²¹⁷ What follows is a summary of the prevalence of three of the most prevalent disorders in children aged 3 to 17 years, with a focus on disparities by race, ethnicity, and poverty.²¹⁸

It is important to note that in recent literature a growing concern has emerged, of inaccuracy in the diagnosis of mental health problems due to racial bias. Two important examples of this issue are: the over diagnosis of Conduct Disorders and the under diagnosis of ADHD in black children and Hispanic children. Conduct Disorder has been over diagnosed in urban, low-income, adolescents of Hispanic and African American race. In contrast, white children with comparable behaviors tend to be diagnosed with mood, anxiety, or developmental disorders.²¹⁹ Recent literature has pointed out that black children and Hispanic children are less likely to be diagnosed with ADHD compared with white children^{220,221} and black children are more likely to receive a diagnosis of Conduct Disorder than that of ADHD.²²² Furthermore, black children and Hispanic children with ADHD are less likely to be using medication, compared with white children.^{223,224}

Lifetime prevalence of diagnosed behavioral disorders in children aged 2-17 in 2011/12

Source: 2011/2012 National Survey of Children's Health



Behavioral disorders: According to the 2011/12 National Survey of Children's Health, the "lifetime prevalence" of behavioral disorders in children aged 2 to 17 years (as reported by a parent or caregiver) was 4.1%, including 3.2% of children who had the disorder at the time of the survey ("current prevalence") and an additional 0.9% of children who had had the disorder at some point in the past, but not at the time of the survey. The prevalence rates for black children (5.5% for lifetime prevalence and 4.4% for current prevalence) were higher than the rates for Hispanic children (3.8% for lifetime prevalence and 3.0% for current prevalence) and white children (4% for lifetime prevalence and 3.1% for current prevalence). The prevalence of lifetime diagnosis and current diagnosis were also at least 50% higher for children who came from households where the highest education level of the adult was less than high school compared with households where the education level was more than high school (lifetime 5.1 vs. 3.4%, current 4.2% vs. 2.6%). Finally, the lifetime prevalence was 6.9% for children in households below the Federal Poverty Level (FPL), 4.9% for children in household between 100-200% FPL, 3.5% for children

in households above 200% FPL and 1.9% for children in households that are at least 4 times the FPL. A similar trend appears in the current prevalence with the three groups having a current prevalence of 5.9%, 3.8%, and 2.6% respectively.²²⁵

Depression: According to the 2011/12 National Survey of Children's Health, lifetime prevalence of depression was 3.8% and current prevalence was 2.2% in children aged 2-17. The lifetime prevalence of depression was slightly higher for white children (4.0%) than for black (3.6%). The current prevalence was the same at 2.3% for both white and black children. Hispanic children had the lowest prevalence for both lifetime and current prevalence (3.4% and 1.7% respectively). The lifetime and current prevalence of depression diagnosis were higher for children from households where the highest education level of the adult was less than high school compared with households where the education level was more than high school (lifetime 4.5 vs. 3.4%, current 2.7% vs. 1.9%). Finally, the lifetime prevalence was 5.6% for children in households below the FPL, 4.2% for children in household between 100-200% FPL, and 3.5% for children in household above the 200% FPL. A similar trend appears in the current prevalence with the three groups having a prevalence of 3.5%, 2.5%, and 2.0% respectively.²²⁶

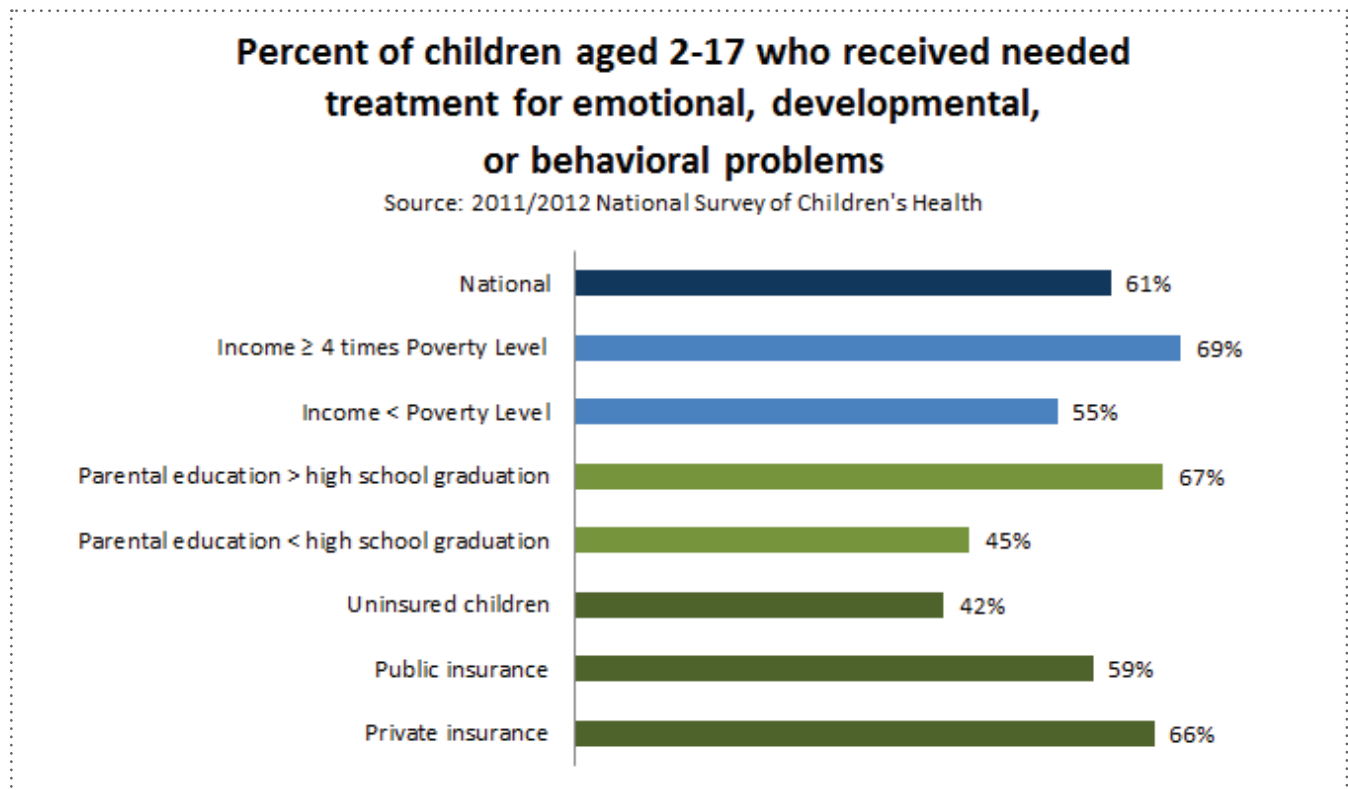
Anxiety: According to the 2011/12 National Survey of Children's Health, lifetime prevalence of diagnosed anxiety was 5.0%, and current prevalence was 3.3% in children aged 2-17. The proportion white children who ever received a diagnosis of anxiety (6.6%) was higher than that of black children (3.2%) and Hispanic children (3.4%). The current prevalence of anxiety was higher for white children (4.4%), than for while Hispanic (2.0%), and black children (2.3%). When looking at level of household education, the prevalence of lifetime and current diagnosis was higher for children whose highest educational level in the household was more than high school compared to less than high school (lifetime 5.6% vs. 3.4%, current 3.7% vs. 2.3%). Finally, the lifetime prevalence was 5.5% for children in households below 100% FPL, 5.5% for children in household between 100-200% FPL, and 4.5% for children in household above 200% FPL. For the current prevalence, the three groups have a prevalence of 3.9%, 3.6%, and 3.0%, respectively.²²⁷

In summary, the diagnoses of behavioral disorders, depression, and anxiety are more prevalent in children from poorer families. Children from families with lower educational attainment have higher rates of behavioral problems and depression, while the prevalence of anxiety is higher for children from families with higher educational attainment. The prevalence of these conditions varies by race and ethnicity. The rate of diagnosis of behavioral or conduct problems are highest among black children. For depression, while rates don't vary much among white, black and Hispanic children, white children have the highest rate. For anxiety, white children have a substantially higher rate, compared with black children and Hispanic children.

Unmet need for services

Childhood mental disorders can be treated and managed through the use of mental health services and, in some instances, medication. However, often, their impact on vulnerable children is magnified due to poor access to services. According to a study of a nationally representative sample of children aged 6 to 17 years who need mental health services, after adjusting for other sociodemographic factors, Hispanic children are significantly less likely to receive mental health care, compared with white children.²²⁸ Furthermore, a study on trends in children's mental health care access from 2002 to 2007 finds persistent racial/ethnic disparities in three measures of access to mental health care: any mental health care, any outpatient mental health care, and any psychotropic drug use.²²⁹ According to the 2011/2012 National Survey of Children's Health, as shown in the following chart, only 61% of children with emotional, developmental, or behavioral problems for which they needed treatment actually received treatment.

Access to needed mental health care was greater among children of families with higher income, and progressively diminished as income level decreased; 69% of children who needed and received mental health care were from families with incomes at least 4 times the Federal Poverty Level versus 55% of children from families with incomes below the Federal Poverty Level. Parental education was another indicator of the likelihood of receiving mental health care for a child in need of it; 67% of children of families where the highest level of education was more than high school graduation vs. 45% for the child of families where the highest level of education was less than high school graduation). Finally, uninsured children are also less likely to receive care than those who have insurance. Children in need of mental health care who had private (66%) or public (59%) insurance had higher rates of receiving care, compared with the uninsured (42%).²³⁰



In addition to the problem of children with emotional, developmental, or behavioral problems not receiving the treatment they need, these problems are also not being reliably identified in pediatric primary care settings. The AAP Task Force on Mental Health recommends that all children and adolescents in primary care settings receive age-appropriate screenings: to identify socio-emotional problems in children aged 0 to 5 years of age; symptoms of mental illness and impaired psychosocial functioning in school-aged children aged 5 through adolescence; and substance abuse problems in adolescents.²³¹ However, studies in pediatric practices indicate that high proportions of patients with behavioral and emotional problems are not being identified, with one study finding that only 50% of those with clinically significant behavioral and emotional problems were identified.²³²

As long as vulnerable children lack access to mental health services that are pivotal for them to thrive, disparities in educational and life outcomes will persist.

Impact on learning

A number of studies have concluded that some mental and behavioral problems impact academic outcomes, even after controlling for socio-economic status and ACEs. Achievement as well as high school completion are both affected by some mental health and behavioral disturbances, and externalizing behaviors, such as ADHD and ODD, have the most proven impact on children's academic success. Internalizing disorders, on the other hand, appear to have less direct consequences on educational attainment.

A study examined the contributions of attention, internalizing, and externalizing problems at school entry to reading and math achievement at the end of high school in an ethnically and socioeconomically diverse sample of the Detroit student population who were following longitudinally. After adjusting for IQ and socioeconomic status, the study found that attention, internalizing and externalizing behavior problems at age 6 significantly predict achievement at age 17 to 18. When the different problems were analyzed simultaneously, the influence of externalizing and internalizing problems becomes non-significant, while attention problems significantly predicted math and reading scores.²³³

An earlier prospective study of the impact of childhood emotional and behavioral problems on academic outcomes in a nationally representative sample found that, after adjusting for socio-economic indicators, when considered separately, both internalizing and externalizing problems were inversely related to the likelihood of receiving a high school degree. However, after analyzing the two simultaneously, externalizing problems were negatively associated with the likelihood of graduating high school, while internalizing problems were not.²³⁴

A cross-sectional study of a nationally representative sample of the US population examined the relationship of early onset mental health disorders (any disorder that started before 18 years of age) and educational milestones (primary school graduation, high school graduation, college entry, college graduation). Seventeen disorders were examined: mood disorders (major depressive disorder, dysthymia, bipolar disorder I and II studied together), anxiety disorders (generalized anxiety disorder, specific phobia, social phobia, panic disorder, separation anxiety, and posttraumatic stress disorder), substance disorders (alcohol and drug abuse and dependence), and impulse control disorders (intermittent explosive disorder, conduct disorder, oppositional defiant disorder, and attention deficit disorder). The analysis controlled for demographic characteristics and ACEs. The only statistically significant associations with failing to complete elementary school are for oppositional defiant disorder and alcohol abuse. Having three or more disorders at the same time is associated with higher odds of failing to complete elementary school. Externalizing behavior disorders were found to be more consistently associated with termination of schooling across the four milestones than internalizing disorders. Neither major depression nor generalized anxiety disorders were associated with subsequent termination of schooling at any of the milestones examined. Twelve of the seventeen disorders examined affected high school graduation in a statistically significant way, and having two or more disorders is associated with higher odds of not completing high school. The study also calculated that the proportion of people dropping out of high school would decrease by 10.2% in the absence of mental health disorders, and the proportion failing to complete primary school would decrease by 3.9%.²³⁵

Another cross-sectional study of a nationally representative sample examined the association of failure to graduate high school by age 18 with individual early onset psychiatric disorders and also adjusted for co-occurring disorders. Disorders included in the analysis were depression, dysthymia, mania, panic, specific phobia, social phobia, PTSD, and generalized anxiety disorders (GAD) for internalizing disorders, and conduct disorder, ADHD (attention type, hyperactive type, and combined type analyzed separately) for the externalizing disorders. After adjusting for ACEs, relevant socio-demographic characteristics and

co-existing disorders, failure to graduate from high school on time was significantly associated with all externalizing disorders, but not the internalizing disorders alone.²³⁶

However, a similar study was conducted amongst a nationally representative sample of the Australian population. The study analyzed the relationship between completing the tenth year of education by age 16 and the early onset of depressive disorders and anxiety disorders. The study concluded that, after adjusting for effects of prior trauma experiences, not completing the tenth year of education was significantly associated with early onset (<16 years of age) of major depressive disorders for females and bipolar and obsessive compulsive disorders for males. However it is important to note that attention deficit disorders were not amongst the disorders analyzed in the study.²³⁷

Review of the scientific evidence on the link between mental health and behavioral disturbances and academic outcomes indicates that externalizing disorders appear to have the strongest impact on academic outcomes. Among the externalizing disorders, attention problems have strong evidence of impact on both math and reading scores, and on high school dropout. Other externalizing disorders, such as conduct disorder, appear to be associated mainly with high school dropout. A meta-analysis of mental health disorders and high school dropout amongst adolescents also found that, after cannabis use, externalizing disorders were the most significant predictors of failing to graduate from high school, and that the association was even stronger when the disorder occurred early in life. There is currently less evidence supporting direct consequences of internalizing disorders, such as mood and anxiety disorders, on high school dropout, compared with substance use and disruptive behavior disorders. Finally, socioeconomic background, academic achievement and family support were identified as significant mediating factors of the association between mental disorders and subsequent educational attainment.²³⁸

ADHD

Attention-deficit/hyperactivity disorder (ADHD) is the most prevalent of mental health disturbances amongst children, and as such, will be discussed in more depth. As discussed in the previous section on mental and behavioral disorders, it has strong evidence of association with negative educational outcomes, among the other examined mental health disorders.

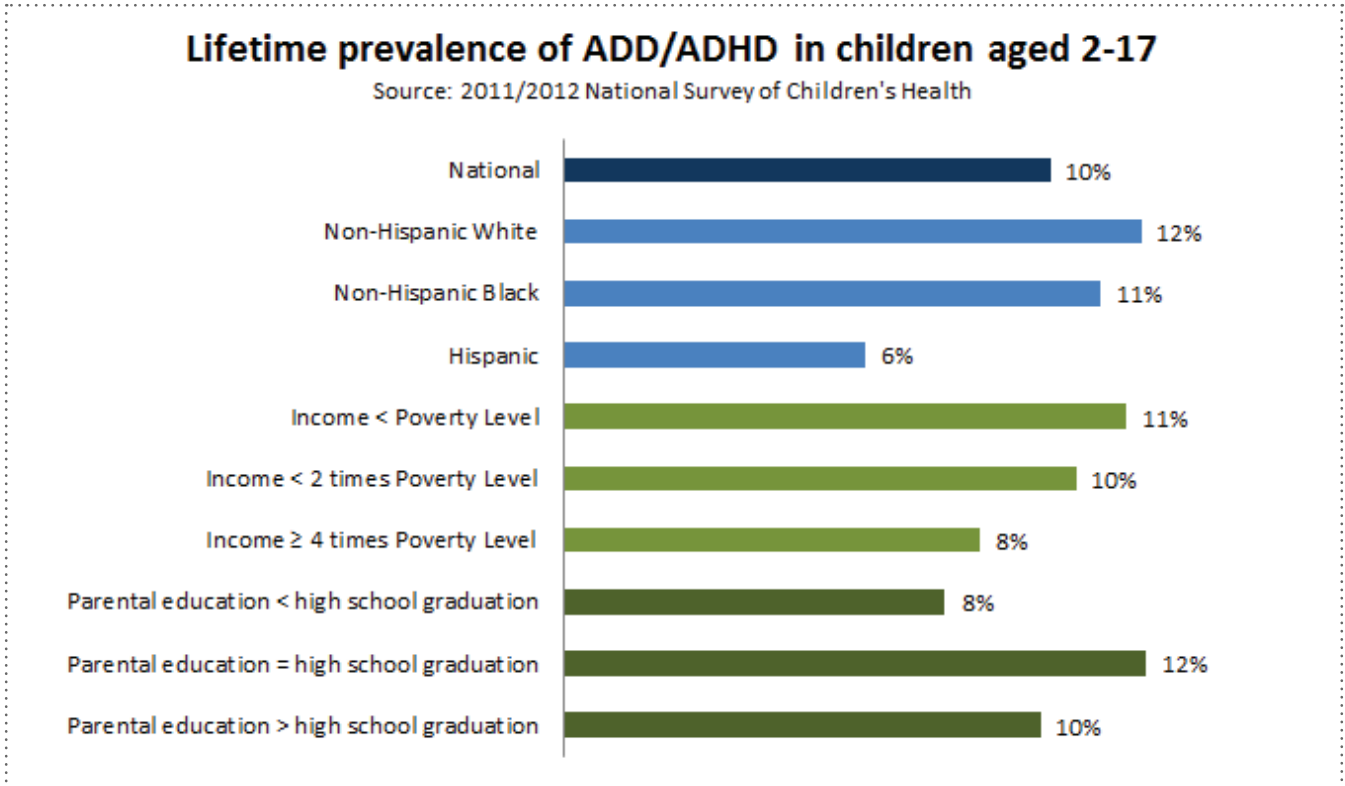
Definitions

ADHD is a neurobehavioral disorder that begins in childhood. Symptoms of ADHD fall into three groups: inattentiveness, hyperactivity, and impulsivity. Some people with ADHD have mainly inattentive symptoms, some have mainly hyperactive and impulsive symptoms, and some have a combination of different symptom types. There is no test that can make or exclude a diagnosis of ADHD. The diagnosis is based on a pattern of symptoms examined in a clinical diagnostic evaluation, incorporating information from multiple respondents (e.g., parents, child, teachers, child care staff) and across multiple settings (e.g., home, school, child care), and an evaluation of co-occurring or confounding conditions. ADHD medication has long been used to effectively treat ADHD symptoms. High-quality behavioral interventions have also been shown to improve functional outcomes of many children with ADHD.^{239,240}

Prevalence & Unmet Need for Services

Based on parents reporting whether their child received a diagnosis of ADHD from a healthcare provider, the 2011/12 National Survey on Children's Health estimates that about 1 in 10 (10%) children aged 2 to 17 received an ADHD diagnosis at some point in their lives. This represents over 6.3 million children nationally. Prevalence was higher for black (11%) and white children (12%) compared with Hispanics

(6%).²⁴¹ Another national survey (the 2011 National Health Interview Survey) found that ADHD lifetime prevalence was 8% nationally in children aged 3 to 17, and prevalence was highest among white children (10%), followed by black children (9%), while Hispanic children had a significantly lower prevalence rate (6%).²⁴² Recent literature has pointed out that black children and Hispanic children are less likely to be diagnosed with ADHD compared with white children^{243,344} and black children are more likely to receive a diagnosis of Conduct Disorder than that of ADHD.²⁴⁵



The prevalence of ADHD was highest among children with family incomes below the Federal Poverty Level (11%) versus children from families at least 4 times the poverty level (8%).²⁴⁶ Children with ADHD also have higher rates of ACEs, compared with children without ADHD. About 45% of children with ADHD have two or more ACEs versus 23% of children without ADHD.²⁴⁷ Only 69% of children who currently have ADHD are taking medication for their condition.²⁴⁸ Furthermore, black children and Hispanic children with ADHD are less likely to be using medication, compared with white children.^{249,250}

Impact on learning

Attention-related disorders and ADHD have been proven to negatively impact learning, among many other life outcomes. A study compared the adaptive functioning of children diagnosed as hyperactive to a control group of children without the diagnosis. Researchers followed them into adulthood, looking at major life events. The hyperactive group had significantly lower educational attainment, compared with the control group. The hyperactive group was more likely to be working exclusively (not while in college), unemployed, or not in school, and less likely to be college students exclusively or students who work while in college. A significantly higher proportion of the hyperactive group had been retained in a grade at least once, suspended from high school, or placed in special education. A significantly smaller proportion of the hyperactive group graduated from high school. Members of this group had significantly fewer years of completed education, had a lower grade point average in the final years of their schooling, and ranked

lower in their class in high school. Furthermore, the study identified severity of childhood hyperactivity (along with being retained in a grade and greater lifetime conduct disorder symptoms) as a predictor of failure to graduate from high school.²⁵¹

A meta-analysis of ADHD and achievement evaluated 72 studies on child, adolescent, and adults to determine presence, direction, and magnitude of achievement effects for individuals with ADHD. Fifty-four studies in the meta-analysis are of children. In this analysis, individuals with ADHD had significantly lower levels of achievement compared to controls. The effect of ADHD on achievement is larger in children, than it is adolescents or adults.²⁵²

A review of the literature on academic and educational outcomes of children with ADHD also found that children with ADHD are at risk of significant academic underachievement, poor academic performance, and educational problems. They are at risk of scoring significantly lower on reading and arithmetic tests than controls, are more likely to be expelled, suspended, or repeat grades, and they are more likely to use special education services than controls.²⁵³

Conclusions

Key points:

- Behavioral disorders, ADHD, depression, and anxiety are more prevalent in children from poorer families.
- Children from families with lower educational attainment have higher rates of depression and behavioral problems other than ADHD, while the prevalence of anxiety and ADHD is higher for children from families with higher educational attainment.
- The prevalence of these conditions vary by race and ethnicity. The rate of diagnosis of behavioral or conduct problems is highest among black children. The rate of diagnosis of depression is similar across the 3 groups. White children have a significantly higher rate of anxiety, than black or Hispanic children. For ADHD, white children and black children have significantly higher rates of diagnosis compared with Hispanic children.
- Recent literature has noted a growing concern of inaccuracy in the diagnosis of mental health problems due to racial bias. Two important examples of this issue are: the over diagnosis of conduct disorders and the under diagnosis of ADHD in black children and Hispanic children.
- The impact of childhood mental disorders on vulnerable children is magnified by poor access to services; children who are poor, uninsured or whose parents have low levels of education tend to have less access to the mental health care they need.
- Disadvantaged groups of children are therefore vulnerable to the learning consequences of untreated behavioral problems (particularly ADHD), which are lower likelihood of completing college, high school dropout, grade retention, suspension, decreased academic performance, and placement in special education. An important caveat is that only some of the studies examined were longitudinal, and could therefore prove a cause-effect relationship.
- Collectively, these findings clearly show the need for disadvantaged children to have access to appropriate mental health care services, so that untreated mental health and behavioral problems don't impede their ability to learn.