

A Review of the Current Education for Children with Attention Deficit and Hyperactivity Disorder and the Effects of COVID-19

Melanie Sun

Mission San Jose High School; Fremont, United States

Email: melaniesuns@gmail.com

Abstract – The education of students with ADHD, one of the most common neurodevelopmental disorders, is a growing concern for many parents and teachers. Affected children often exhibit symptoms of hyperactivity and/or inattentiveness, which make learning in a traditional classroom more difficult. In the United States, there are laws in place to provide them with individualized learning plans that outline any special accommodations or modifications they need. Some parents choose to homeschool their children so that they can receive an even more individualized education. Due to the COVID-19 pandemic and social distancing protocols, these children are unable to receive the level of instruction they need from their teachers. The symptoms of the disorder make the transition to distance learning even more difficult than for the typical student, so parents are becoming more involved in the education of their child despite limited resources. However, as there are limits to what parents can provide, it is crucial that additional alternatives are developed so that families in need can be provided for in the future.

Key Words – ADHD, School-aged children, distance learning, COVID-19, homeschooling

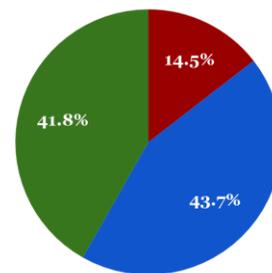
INTRODUCTION

Attention deficit and hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders. About 9.4 percent of children aged 3-17 in the United States have ever been diagnosed, and approximately one third of affected individuals will continue to experience symptoms as adults [1, 2]. ADHD cannot be tested for in a lab, and diagnoses usually rely on information from parents and teachers and other medical evaluations [3].

Affected individuals are generally recognized by hyperactivity, difficulty staying focused, and impulsive behavior [4, 5]. Based on the symptoms they exhibit, they are categorized as predominantly inattentive type, predominantly hyperactive-impulsive type, or combined type according to the criteria set by The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) [4, 6]. Children who are predominantly inattentive may have difficulty paying attention to details, following directions, staying organized,

and remembering their daily schedule [3]. Predominantly hyperactive-impulsive children often find it challenging to stay seated in class or working quietly and may also excessively interrupt others who are speaking [3]. Combined type children exhibit symptoms of both the predominantly inattentive type and the hyperactive-impulsive type [3]. Individuals with ADHD also lack executive functions, including sustained attention, planning and organization, and working memory, which have been shown to determine a student's academic achievement [7].

Studies show that individuals diagnosed with ADHD have a higher mortality rate, are of greater risk for other mental health conditions, and are more likely to be involved in criminal behavior [8]. At school, affected children show academic underachievement, are more likely to repeat a grade or be expelled/suspended, and are 4 to 5 times more likely to require special education services [9].



• Severe • Moderate • Mild

FIGURE 1: Parent-reported Severity of ADHD Symptoms in Children. Data Source: 2016 National Survey of Children's Health

As Figure 1 shows, about 14.5 percent of affected children exhibit severe symptoms, while the majority of children experience mild to moderate symptoms. Although ADHD cannot be cured, the symptoms can be treated with pharmacotherapy and psychotherapeutic interventions [10, 11]. Pharmacotherapy is generally viewed as an essential element for treatment as it is more cost-effective [11]. Some psychotherapeutic interventions include behavioral parent training (BPT), behavioral classroom management (BCM), and organization training [3].

CURRENT EDUCATION

Currently, there are two laws in the United States that determine the extent of services and accommodations that children with ADHD receive in traditional schools: the Individuals with Disabilities Education Act (IDEA), and Section 504 under the Rehabilitation Act of 1973 [13]. Alternatively, some parents choose to homeschool their children [7].

I. IDEA and Section 504

Within the 13 categories of disabilities organized by IDEA, children with ADHD are classified as “Other Health Impaired (OHI)” [13]. Before special services can be provided, a group of professionals will observe and assess the child to determine the degree of a child’s disability [13]. If a child exhibits symptoms that are severe enough to impair their ability to learn and participate in a traditional classroom environment, they can qualify for an Individualized Education Program (IEP) plan [13]. The document is a personalized plan designed for the student together by teachers, therapists, and parents [13]. It outlines detailed information regarding the student’s goals, standardized tests, extracurricular activities, and behavior at school, as well as states any accommodations in the classroom and modifications to the curriculum the student may need to learn [14]. If the child exhibits behavioral issues, professionals can carry out functional behavioral assessment (FBA) to propose interventions included in the IEP plan [15]. The process of FBA generally involves a series of tests in which practitioners gather data relevant to the target behaviors by observing the child and interviewing parents or teachers; then, they analyze the data and create individualized intervention strategies [15]. In addition to special education, the IEP plan also provides services outside of the school setting, such as speech therapy [16].

The 504 plan is similar to an IEP plan, but it provides for individuals who do not exhibit symptoms severe enough to qualify for an IEP plan, and is more common for children diagnosed with ADHD [13]. Under the less formal 504 Plan, children remain in the classroom environment with special accommodations, and special education services outside of school are not provided [13].

Due to the nature of IDEA, a family’s economic status has a large effect on the amount of benefits a child can receive [17]. The act is heavily reliant on a parent’s ability to advocate for their child and be vocal about the services their child requires, and working, low-income parents often do not have the time or money to do so [17]. Furthermore, schools in underprivileged communities lack adequate resources and are unable to provide their students with the same level of services as those available at wealthy schools [17]. As a result, the teachers at these schools, who are often inexperienced and burdened by heavy workloads, have greater difficulty developing elaborate IEP plans and ensuring that the needs of all of the students are met [17].



FIGURE 2: Parent-reported treatment types for children and adolescents with ADHD by age. Source: Danielson, Melissa L et al. “Prevalence of Parent-Reported ADHD Diagnosis and Associated Treatment Among U.S. Children and Adolescents, 2016.” *Journal of clinical child and adolescent psychology : the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53* vol. 47,2 (2018): 199-212.

Figure 2 estimates the types of treatment children with ADHD usually receive at specific ages. As shown by the shaded areas, therapy, rather than medication, is the most common form of treatment for very young children, while school-aged children typically rely on a combination of both medication and behavioral interventions to treat their symptoms.

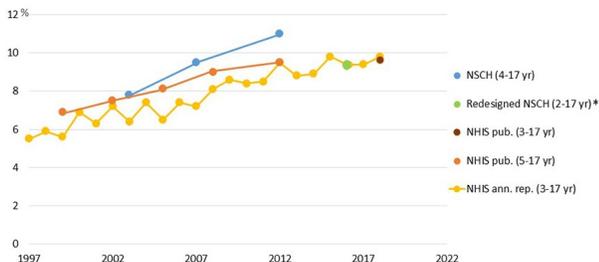


FIGURE 3: Percent of children with a parent-reported ADHD diagnosis Source: CDC. “ADHD Throughout the Years.” *Centers for Disease Control and Prevention*, 31 Mar. 2020, www.cdc.gov/ncbddd/adhd/timeline.html.

The increasing prevalence of parent-reported ADHD diagnoses in school-aged children in recent years is depicted in Figure 3. However, it is unknown if this increase is simply due to more children receiving diagnoses or if there is a change in the number of affected children [12]. Furthermore, since the data are parent-reported and is not confirmed by medical professionals, there may be some information bias present [1]. Despite these limitations, it is clear that with this growing trend of diagnosed individuals, it is vital that there are adequate resources available for them. Therefore, the quality of these children’s education, which has a large impact on their growth and future, is an increasingly important concern.

II. Common Accommodations and Services

Both IEP and 504 plans can provide children with ADHD with accommodations inside the classroom if it is necessary for a child [13, 14]. Accommodations vary based on the individual student's needs, but common interventions include additional time to take tests, more detailed instructions for assignments, special seating away from distractions, specific cues to increase focus during lessons, and encouraging cooperative behavior [13, 14, 18].

Children with ADHD may also receive behavioral therapy in the classroom [3, 19]. Behavioral classroom management is an evidence-based program that focuses on and supports a child's positive behaviors [19]. By managing the classroom in an orderly manner and setting clear expectations for the child, the process has shown to decrease the frequency of negative behaviors, promote student engagement, and enhance the social and emotional learning of the child [19]. Through organizational skills training, children can learn essential time management and planning skills that can help them enhance their school performance and social ability [20]. Teachers can encourage target behaviors by rewarding a student when they are more organized than usual. They can also utilize checklists and schedules to help the child manage their assignments and allocate their time wisely [20].

III. Homeschooled Students

One of the reasons parents choose to homeschool their children is if they feel that the needs of their children are not adequately addressed at a traditional school [7, 21]. By homeschooling their children, parents can be certain that the needs of their children are met [7, 21]. Each state has its own set of requirements for parents who wish to homeschool their children, which can range from a high school diploma to a teacher's certificate, so any legal issues must first be clarified before homeschooling can begin [21]. The educational setting varies between each family, but it is certain that homeschooled students with ADHD receive an education that is heavily focused on individualized learning and caters to their specific needs [7, 21].

Homeschoolers may decide to hire a teacher who will design a curriculum similar to that of a conventional school, or they may allow their children to follow a student-led curriculum in which they choose what they want to learn and focus on real-world experiences [7]. However, most families decide to employ a balanced curriculum that contains aspects of each of these two more extreme situations [7]. For example, a parent could teach their child the majority of subjects and hire a professional to teach the more advanced courses [21]. In the case of working parents, they usually provide resources such as workbooks or recorded lessons to their child, who is trusted to complete their work with little supervision [21]. Oftentimes, parents keep in contact with the school that their

children would regularly be attending and are able to receive access to certain facilities provided by the school [21].

The learning experience for homeschooled students with ADHD is entirely personalized to meet their needs [7, 21]. The lack of restrictions results in an individualized and flexible learning environment [7, 21]. As long as the student is able to focus, teaching can be done almost anywhere: in parks, on a car ride, or even on a trampoline [21]. A 2018 interview conducted by Melissa Felkins at Walden University recorded the experiences of homeschooled students with ADHD [7]. One student ADHD stated that she could learn at her own pace and the flexibility of her schedule allowed her to have time to herself and focus on other activities [7]. Furthermore, several students stated that they had access to resources and tools that are normally prohibited in traditional learning environments [7]. For example, a student shared that she understood material better when she drew her notes rather than writing them down, but this method is not likely to be approved by teachers in conventional schools. [7]. Outside the home setting, the students had social interactions based on their own social needs and could participate in extracurricular activities [7].

Despite the individualized learning that homeschooling provides, it is a concern that parents may not be able to recognize crucial development milestones in their children and fail to realize when their children are behind in their learning [7]. In this case, homeschooled children with ADHD may receive behavioral treatment, which is more effective the earlier it is carried out, later than children who are observed on a daily basis by trained professionals [7].

THE EFFECTS OF COVID-19

As a result of the COVID-19 pandemic, children with ADHD who attend traditional schools need to adapt to distance learning from home with limited support from special education services [16, 22]. Although the special circumstances pose challenges for these families, parents are stepping in to provide for their children to the best of their abilities [23].

I. The Obstacles to Learning

In a questions and answers document released in March 2020 by the United States Department of Education, it was stated that IDEA, Section 504, and other laws "do not address a situation in which elementary and secondary schools are closed for an extended period of time" [24]. The document claims that if schools do not provide instruction to the general student population, they are not required to do so for special education students [24]. Likewise, schools that continue to provide services to the general student population are required to provide for special education students as well [24]. If a school closes, the IEP and Section 504 team are required to determine the services the child requires, but it is not mandatory for them to design distance learning plans [24]. Public schools that continue instruction are required to

determine the method of distance learning they wish to implement for special education students based on the resources that are available to them [24].

As a result of distance learning, children lack contact with their teachers and face-to-face interaction with their peers [7, 16, 22]. Students with hyperactive-type ADHD who already experience difficulties staying on task and organized due to the symptoms of the disorder may find that it is even more challenging to concentrate on their schoolwork and allocate their time accordingly due to distractions in their home environment and a lack of structure in the day [5, 16]. Since it is already difficult for these students to follow directions given by teachers face-to-face, instructions given virtually may be an even more challenging for them to understand [25]. As a result of these changes, children are under increased levels of stress and require additional support from those around them [16, 25]. In addition, there is a concern that special education students, which include children with ADHD, will have regressed in their learning and social ability when they return to an educational setting due to an extended period of time away from their instructors and peers [22].

Several special education teachers overcame some of the difficulties that came with transitioning to online learning, though the process required additional effort and compromise from all of the parties involved [22]. With the help of either the Zoom or the Google Classroom programs, teachers were able to spend time with their students virtually on a daily basis [22]. The instructors also guided parents in ways that they can teach the students and become more involved in their learning [22].

II. Recommendations for Parents

During these difficult times, parents are providing additional support to their children, and their role in their children's education is becoming even more prominent. Parents are encouraged to communicate with teachers and ask questions frequently [25]. At home, a quiet workspace away from toys and other distractions is recommended for children so that they can focus on learning [26]. Since children with ADHD have shorter attention spans, the time period set for learning is to be kept short (45 minutes) and the goals for each period should be clearly set [25]. Experts suggest that ideally, a child's positive performance is reinforced with specific feedback that identifies the correct behaviors [16, 25]. For example, it is more beneficial for a child if their parent says "good job putting your books back in the drawer," rather than "good job today." [25] It is also recommended for parents to encourage physical activity throughout the day, which can help ease a child's symptoms of hyperactivity and reduce stress [16, 25].



FIGURE 4: An example of a visual schedule by the Centers for Disease Control and Prevention Source: *Creating Structure*. 2020, www.cdc.gov/parents/essentials/activities/activities-structure.html.

A visible schedule, as shown in Figure 4, can be created for the child so that each day is well-structured and available time can be allocated in an organized manner [16, 26]. The checkboxes allow the student to keep track of their progress throughout the day and marking completed tasks can give them a sense of fulfillment [26].

III. The Limitations of Parent Involvement

Even if parents are doing their utmost to assist their children and become more involved in their learning, it is difficult for them to be able to provide support on the level of professionals. It is also important to consider that many parents, especially those in low-income families, may not have the time or resources to be able to step into a teacher's role [22]. Parents who work at home are able to assist their child with learning to a greater extent, but others who need to leave for work cannot provide that degree of support. In an interview conducted by Courtney Norris at PBS News in April 2020, parents of children with special needs shared their experiences with distance learning [23]. They expressed their concerns about the quality of education that they are able to provide to their children with the limited resources available to them [23]. Some felt that the schools are not addressing the needs of children with disabilities and were burdened because they believed that stepping into the role of multiple professionals at once is beyond their capabilities [23]. Parent Erin Croyle expressed her frustration, stating: "I try to do a schedule, and I try to get something to happen every day. And, every day, I feel like a failure" [23].

IMPLICATIONS

Regardless of whether children with ADHD attend conventional schools or are homeschooled, it is clear that the adults around them strive to support the children in what they believe to be the best ways possible. Although IEP and 504 plans are created considering the specific needs of each child, they have several limitations. The circumstances of families of lower socioeconomic status are not accounted for, so those children cannot receive the full benefits of the laws that govern special education. Furthermore, homeschooling children provides a level of individualization that traditional schools cannot reach. With homeschooling, students can be provided further and more flexible accommodations that suit their personal way of learning. For example, homeschooled students may choose to start learning later in the day if they feel that they can concentrate better during those times, while children at traditional schools need to follow the schedule set by the school. The personalization of learning and the wide variety of tools available that homeschooling provides is especially beneficial for students with ADHD because of how differently the disorder affects each individual. However, as homeschooling a child requires a lot of work from parents, it is not a realistic option for working parents with young children. Parents may be able to trust that older students finish their work on a daily basis, but it is unreasonable to expect a young child to do the same. As mentioned earlier, homeschoolers may not be able to identify if their children are learning at the same pace as other children of the same age, and for a working parent who spends even less time with their child, it may be even harder to notice these subtle differences.

As many parents develop their own strategies to support their children during the COVID-19 pandemic despite limited guidance from schools, it is possible that homeschooling children with ADHD could become a more popular option for families who have the capability to do so and are confident in their abilities. Students who were previously homeschooled before the pandemic may not need to cope with as many changes as those attending traditional schools, and may find that their learning is not as negatively impacted. Still, for many parents, homeschooling their children may have simply be a last resort due to current circumstances because they feel that they are not experienced enough to be solely responsible for the education of their children.

As social distancing protocols are lifted in certain parts of the United States and children return to schools, some teachers are able to continue instructing students in traditional classroom environments. Nonetheless, it is critical that special education organizations are ready to provide concerned families with solutions and essential resources to ensure that children with special needs can have the quality of education that they deserve during this pandemic and other emergencies that could possibly occur in the future.

CONCLUSION

With the increasing number of ADHD diagnoses, it is crucial that affected children are able to receive an education that addresses their needs. Although the symptoms of the disorder pose many challenges for them as they learn and build skills essential for their well-being, the individualization of their education, whether it is in the form of accommodations at traditional schools or homeschooling, gives them the opportunity to grow alongside their peers. However, students in less fortunate communities often encounter a lack of resources, which shows how much educational opportunities can vary between special education children protected under the same laws. Distance learning during the COVID-19 pandemic further reveals the challenges that children with ADHD face as they struggle to adapt to unfamiliar schedules and different learning environments. Even as parents and teachers seek to provide students with support and resources to the best of their abilities, it is evident from the concerns of parents that there is a lack of guidance for families of affected students.

There are several limitations to the information presented in this paper. As mentioned before, the majority of statistical data relies on parent-reports and therefore may be subject to information bias. Additionally, this paper generally focuses on the positive aspects of homeschooling and fails to consider students who may not have found the homeschooling experience to be as enjoyable. The included interviews of homeschooled ADHD students and parents of special education students are not accurate representations of those populations as a whole because of the small number of individuals being interviewed and the fact that the interviewees had the option to not participate. Furthermore, the recommendations for parents presented in this paper, despite being suggested by professionals, may not be applicable to every single child with ADHD due to how much the symptoms can vary between individuals.

Regardless of the limitations, it is clear that without an increase in the resources and alternatives available for these families, these difficulties will continue to persist and will arise again during another crisis. There is a necessity for widely-accessible special education services that will adequately support these students through any obstacles they may face now as well as in the future, and for this, the united efforts of educators, special education providers, and parents is key.

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