ADHD: Defying the Stigma

KARLA GEIGEL
Produced in Vanessa Calkins' Summer 2016 ENC 1102

Introduction

Can you imagine being only six years old in first grade and not knowing why you're different and struggling in school? Can you imagine being the parent of the child and being asked, "Why am I so stupid?" Believe it or not, this is the case of a child who I know named Carlos. He asked his mom this exact question after struggling with first-grade math. Carlos is only one child among many who have been diagnosed with Attention Deficit Hyperactivity Disorder, or ADHD. Unfortunately, the stigma behind this disorder often inhibits children from getting the help and sympathy that they need.

Daley and Birchwood said, "One cannot expect a child to operate successfully in an academic environment if they are inattentive, disruptive and aggressive, and have problems with working memory, planning and organization" (456). This quote addresses the lack of accommodation in a classroom setting for children with Attention Deficit Hyperactivity Disorder. It also talks about the many areas of school that children struggle with that are necessary for success such as organization and planning. I will use my research to address many aspects of ADHD including its symptoms, diagnosis, and possible causes. I will look at the shallowness of the stigma and its effect on how a child looks at themselves and their disorder as well as at the specific ways that ADHD affects children in the classroom setting, such as having problems with organizations, having a hard time sitting down to do school work, or having trouble paying attention because of ADHD or other comorbidity-type problems, such as processing deficits. The research will highlight the teacher's role in the life of a child with ADHD; they arguably might play one of, if not the most important roles, especially when it comes to ADHD in the classroom. Last but not least, I will address different strategies that can help a child with ADHD cope with their symptoms and ultimately be successful in school.

Background Information

Ever since I was nine years old, I knew I wanted to be a pediatrician. Everything remotely related that I learn about is filtered through that lens. In my spring semester at the University of Florida, I took a class called Exceptional People that was an overview of all kinds of disabilities. I remember being so incredibly fascinated by the learning disabilities chapter and wanting to know more and more. I figured, as an aspiring pediatrician, researching learning disabilities could help me become a successful, knowledgeable doctor because I will undoubtedly see patients with all sorts of disorders and disabilities.

I went to discuss this possible avenue of research with my professor and I mentioned knowing a family friend, also a pediatrician, who has a son with ADHD. She encouraged me to stick to researching ADHD since I have this great potential interview subject. The term "learning

disabilities" covers so much and I would be very overwhelmed with trying to figure out a direction for my research. She was 100% right. Even researching ADHD alone, I got overwhelmed with the amount of research out there. I was happy and content knowing that I was learning about something not only near and dear to my heart, but will also help me in my career.

From there I began researching. Because ADHD is something that I am interested in learning about in all directions that you can possibly approach it, it was very hard for me to know where to stop. My research question went from, "What is the impact of ADHD in children and how can professionals in the educational and medical community work together for the benefit of the child?" to simply. "What is the impact of ADHD in children and how does it affect performance in the classroom?" Even though this change threw me for a loop, it helped me so much because all I was interested in searching for was "ADHD," "children," and possibly "classroom." This opened up so many avenues for sources, interviews and observations that I am giddy about because I love the information I have learned.

Synthesis

All of the researchers from the articles and sources I found agree that Attention Deficit Hyperactivity Disorder is composed of three overarching symptoms: inattention, hyperactivity, and impulsivity. Shimizu, et al. explain it like this: The Diagnostic and Statistical Manual of Mental Disorder Volume IV splits the ADHD symptoms into three categories: hyperactivity/impulsivity, inattention, and a combined category including all three (para 5). Vivian Hill from the University of London, who specializes in Special Education, Applied Psychology, and Educational Psychology, and Turner would agree with Tarver, et al. They say that ADHD diagnoses are based on the definition that comes from the DSM-IV. Antonio Iudici, from the University of Padova Psychology Department, however, phrases the definition a little bit differently but still agrees that the symptoms are all the same: "Attention-deficit/hyperactivity disorder (ADHD) is the name with which you identify a 'symptomatic' framework characterized by behaviors that are considered dysfunctional primarily inattention, impulsivity, and hyperactivity" (Iudici, et al. 506).

There is no concrete evidence on what causes ADHD, but many doctors and researchers agree that ADHD could be caused by the collaboration of genetic and environmental factors. Joanne Tarver, from the University of Nottingham Division of Psychiatry and Applied Psychology, worked with Daley and Sayal to conclude that ADHD results from a combination of genetic and environmental factors (Tarver, et al. 1). Hill and Turner add to this by saying that identifying the cause of ADHD can be a difficult process because of the many biological and environmental factors that can contribute to the development of the disorder (14).

Iudici, et al. would agree with researchers Block, et al. with the claim that an ADHD diagnosis is very subjective. In his research, Iudici, et al. says that identifying ADHD is not exactly an easy thing to do considering that the diagnosis itself is subjective and there is no specific diagnostic test that can accurately identify ADHD in a child. Robert Block, from the University of Pennsylvania, in his collaboration with Macdonald and Piotrowski says that, "Attention deficit hyperactivity disorder remains controversial due to the subjective nature of its symptoms and the possible over diagnosis and over treatment of the disorder."

David Daley, from the University of Nottingham, has expertise in Clinical Psychology, Applied Psychology, and Developmental Psychology. He argues that a child who shows symptoms of ADHD in toddlerhood may not have the disorder. In his research with James Birchwood, they find that not all kids who show symptoms in toddlerhood develop the disorder later on. Adults may even learn to cope with their symptoms and continue into higher education despite an ADHD diagnosis or presence of symptoms in childhood (Daley and Birchwood 457). Block, et al. would agree with Daley's and Birchwood's findings. Young kids may act this way, although this does not mean they have ADHD: "The difference with ADHD is that symptoms are present over a longer

period of time and happen in different settings" ("What Is ADHD?"). Block, et al. mention that it is important to note that even though a child may exhibit symptoms of ADHD, they may not have the disorder.

Vivian Hill would also agree with Bringewatt as well as Iudici, et al. in saying that the stigma that may result from a diagnosis of ADHD affects children and how they see themselves and their disorder: "Increased recognition of difficulties faced by children with ADHD may serve to reduce the stigma traditionally associated with 'naughty children' and 'ineffective parenting.'" However, this label may cause children to limit how they see themselves, buy into the self-fulfilling prophecy, and believe whatever society says about them and their disorder (Hill and Turner 15). Elizabeth Bringewatt did a study where children explained how they felt about their disorder and the stigma attached to it. One participant said, "I was kind of embarrassed" (Bringewatt 268). She also says that diagnosing children can lead to a stigmatization of the disorder, drawing attention to the student rather than the difficulties that arise from having the disorder (Bringewatt 262). Iudici, et al. say that the only problem with an ADHD diagnosis is that it can turn into the "stigma" that can then affect the child's confidence and other people's judgments of the child.

Many researchers agree that ADHD often coincides with other disorders. This phenomenon is called comorbidity. This in with the difficulty psychologists have in diagnosing ADHD because of a lack in diagnostic test for the disorder, and also because a diagnosis of ADHD is often found among several other disorders in 2/3 of ADHD cases ("What Is ADHD?"). Tarver, et al. say that ADHD, in about 50% of cases, coincides with other disorders (6). Shimizu, et al.'s study, though it doesn't specifically mention comorbidity, discusses that sensory processing deficits may be one of the disorders that is part of the 50%-60% overlap with an ADHD diagnosis. They define sensory processing as the brain being able to "process and organize appropriate responses to information" (343).

While most people know about ADHD, many do not know how and why it affects children. This is because a lot of society buys into the stigma that ADHD is a disorder for hyperactive, inattentive children.

Beryl Topkin, who specializes in Child and Family Studies at the University of Western Cape, South Africa, and his core researchers Roman and Mwaba, would agree with Imeraj, et al. in saying that teachers play an important role in the lives of children with ADHD: "Teachers seem to play an important role in adjusting the classroom environment to the specific needs of the child at risk for learning problems and to encourage classroom attention in different instructional settings" (Imeraj, et al. 488). In addition, Topkin, et al. mention that teachers play an important role in "creating an environment that is conducive to academic, social and emotional success for children with ADHD" (1). Teachers are often the ones that refer the child to be tested for things like ADHD (Topkin, et al.). Imeraj, et al. go a little bit further in her research to explain that teachers play such a vital role in children because it seems that the school classroom is a "primary setting for the expression of problematic behaviors in ADHD" (487).

While most people know about ADHD, many do not know how and why it affects children. This is because a lot of society buys into the stigma that ADHD is a disorder for hyperactive, inattentive children. While these are two very important symptoms of ADHD, knowing how the disorder manifests itself in and impacts the life of a child, specifically in school, is how you answer the "how" and "why" questions and move on to properly manage the symptoms in the classroom.

Methods

Observation

The classroom that I observed was through a video on YouTube called "Learning Disabilities" where a professor had participants—including a social worker, a psychologist, a recreational therapist, a regular education teacher, a special education teacher, and parents of learning-disabled children—fill the desks around the classroom. I observed it Friday, July 22nd around 2:15 in the afternoon. I was sitting at my desk with my iPad propped up and opened to YouTube while next to it I had my computer ready to take notes double-entry style. By having the video on a separate device, I was able to open up a document with a two-column table set up. I took notes using bullets on one column and then I went back after finishing the video and added in the interpretations. I chose to use this video as my observation because it gave me great insight and knowledge into the mind of a student with a learning disability.

What I observed was a professor simulating for these professionals and parents what it was like to be learning disabled. He went through a series of examples that included processing deficits, risk taking in the classroom, and frustration, anxiety, and tension in a child who is learning-disabled. I chose to observe this specifically because of the section that discusses processing deficits. In my research I had found a lot of references to children with ADHD also having processing deficits but they didn't explain what they were or what they looked like in a child. I wanted to answer that question for myself so I researched and found this video that I had previously watched in my spring semester at UF for my disabilities class. Through this video I was able to answer my questions about processing deficits as well as learn so much more about what it is like to be a learning-disabled child in a mainstream classroom.

Interview

My interview subject was Denise Serafin, M.D., who works as a pediatrician at Windermere Pediatrics and also has a son with ADHD. Denise is a born and raised Puerto Rican who went to Ponce School of Medicine in Puerto Rico and afterwards moved to Cleveland, Ohio with her husband to do her pediatric residency. She has been a friend of my family for over 10 years after starting work with my mom at Windermere Pediatrics in 2005 shortly after moving to Florida. She has known me since I was eight years old so it is really cool to look back and see how our relationship has grown since then. I look to her as a role model and mentor so interviewing her was actually a lot of fun and I got plenty of useful information out of it.

I conducted my interview at her house during a typical Florida 4 o'clock thunderstorm on July 21 where we sat at her dining room table for about an hour and a half while I recorded the conversation with the Voice Memos app on my iPhone. The interview itself was very much like any other conversation I would have had with her, just a little bit more structured so that I could get the information I needed for my paper. But, the structure did not change the fun, conversational tone of our interview. Denise was the inspiration for choosing my research topic, which is why I chose to interview her. I knew I wanted to research some kind of learning disability and I immediately thought of her. I knew she could give me a lot of great insight into ADHD as both a parent and a doctor. The theme of our interview was the journey of her son and his diagnosis with ADHD. I wanted to learn more about what it looked like for him in the classroom, the diagnosis process, and perhaps what specific intervention and therapy strategies he himself used as a child with ADHD. I learned so much about his personal experience with ADHD and how he has grown in different academic areas through tutoring and therapy.

Research

My library research was extremely effective and successful. There were so many articles out

there about ADHD that I had to limit my search terms to words specific to what I was asking in my research question. My main terms were "ADHD," "classroom," and "impact." Most of the time I used "ADHD" and "classroom" together, "ADHD" and "impact" together, or I would use the term "ADHD" by itself so that I could simply find information about the disorder. I mainly used UCF's QuickSearch tool to search through the main databases. A lot of the articles that came up were part of Psychology journals and they were easier and more efficient to find using the main database rather than using a specific subject database such as "Psychology."

Genres

The first genre that I chose to analyze was a Sample 504 Plan. A 504 Plan is used to create a plan to accommodate a child's needs in the classroom if ADHD symptoms "substantially limit" a child's ability to learn. Included in this document are accommodations such as extra time, assistive technology or therapy access. The 504 Plan is named after an anti-discrimination law in the Individuals with Disabilities in Education Act (IDEA) titled "Section 504." I chose to analyze this genre because it directly applies to my area of research. Many students with ADHD qualify for a 504 Plan because their symptoms significantly inhibit their classroom performance.

Analyzing this allows me to connect the bridge between the sources I have found discussing this and what ADHD looks like in the real world with a 504 Plan/official document. I found this source by googling "Sample 504 Plan" and this lead me to a website titled "ADDitude Magazine" that described this plan detail and also provided a completed sample that I was able to use for analysis.

The second genre that I chose to analyze was a meme that says, "ADHD: We think more things before breakfast than most people think all day!" I found this genre by googling "memes about ADHD" and, after scrolling through a lot of the same ones, I finally found one that I thought, "Hey, this seems like a good one." I chose this genre because, while it addresses a common factor of ADHD, it also addresses the stigma. The "thinking more things before breakfast" factor is not the only factor in a disorder like ADHD, but it is possibly the only thing that people may know about it. A lot of my research articles mention the stigma and one book chapter even has kids explaining how it makes them feel. I thought that this would add sympathy and understanding to my research and motivate my readers to think deeper about the disorder and how it affects children.

Discussion of Methods

The most successful way of collecting my data was definitely using the library databases to find my articles. I had never been taught how to use databases in my research but, even though it was new for me, it wasn't hard to get the hang of it. By using databases, you learn how to manipulate words to find the sources that you want. I think one of the reasons why it was so successful was because you can type multiple words into each search box and it will find all the words you asked for in one article. It was also very successful because ADHD has been extensively researched so there was no shortage of sources. This meant that I had to narrow my focus, but it was definitely rewarding.

I also think that the way that I collected my interview was very successful. I went in with a general list of questions to ask and when I asked the first one, my interview subject actually ended up answering the next few questions without knowing what question was coming next. My first question was open ended enough for her to elaborate on those different subjects.

The least successful way that I collected my data was definitely using Google to find my genres. In the case of the meme that I used, there was no other way to find it, but I probably should have asked somebody where I could look at a sample 504 plan. I was lucky enough to have used Google properly and found the exact source that I needed, but not everyone is as successful. My suggestion for future students is to consider the genre that they want to analyze and then try to find ways that you can access it in person, whether it is through someone you know or by visiting an

office that may have what you are looking for. That might be more beneficial than Google.

Discussion

Causes

There is no definitive cause of Attention Deficit Hyperactivity Disorder. However, there are several possible factors, including genetic, environmental, and biological factors that are likely influences. Identifying the cause of ADHD can be a difficult process because of the many biological and environmental factors that can contribute to the development of the disorder (Hill and Turner 14). Studies have shown decreased volume in the prefrontal cortexes of children who have ADHD as compared to healthy controls. As the prefrontal cortex is largely responsible for inhibitory control and working memory, this may explain the attentional difficulties that children with ADHD have (Daley and Birchwood 455). Researchers of ADHD think that the disorder may be related to problems in brain development, specifically in the prefrontal cortex (Block et al.). For clarification, the prefrontal cortex is located in the forehead area of your brain and contains your ability to plan things, explaining why children with ADHD have problems with schoolwork and organization. Block, et al. also present that "some genetic causes of ADHD that have been suggested include a possible mutation of the dopamine D4 (DRD4) receptor gene or a phenotypic variation in the cathechol-O-methyltransferase (COMT) gene." There are chemicals in the brain that affect the way that certain genes are supposed to function. Other factors that may cause ADHD also include emotional trauma, early childhood head injury, or environmental contaminants (Block et al.). The causes of ADHD are still not fully understood, but some theories conclude that genetic and environmental factors can contribute to the cause of the disorder ("What Is ADHD?"). Overall, no one is really sure where ADHD comes from and, while theories have been presented, the jury is still out and may not return for quite some time.

Symptoms and Diagnosis

There are three symptoms that specialists look for when diagnosing ADHD: inattention, impulsivity, and hyperactivity. Daley and Birchwood mention that the symptoms of ADHD do include these three, but in order to be properly diagnosed, they must be present for six months and significantly prevent the child from functioning (455). It is also included in studies that, in addition to the six month period, symptoms must be present in a variety of settings including school and home (Block et al.). Imeraj, et al. describe the three symptoms of inattention, hyperactivity, and impulsivity as age-inappropriate and impairing in regards to ADHD as a disorder.

I had the opportunity to interview a dear friend and pediatrician, Denise Serafin. She gets along with my family so well because she is a fun-spirited, joyful person who shares our values. I can go to her with anything that I would go to my mom for and talk to her about anything. I love going over to her house to hang out or study because the environment is so bright and lively and I can talk to her or hangout with the kids when I need to take a break. She is also my pediatrician so that makes the visits to the doctor a lot more fun and enjoyable.

During our interview, we were able to discuss ADHD, specifically in relation to her son Carlos who was diagnosed at six and a half years old. She says this about the symptoms: "With ADHD, it has to affect multiple areas of life and the occurrence of symptoms, in order to diagnose the disorder, has to be at a certain age, somewhere around six" (87:19).

Once the symptoms of ADHD are identified, the diagnosing process begins. This process is subjective, requires the collaboration of many professionals, and affects millions of children around the world. Based on many research studies, it is estimated that about 10% of children have been diagnosed with ADHD with boys 2-3 times as likely to be diagnosed than girls (Block et al.). It "requires the active collaboration of other roles: on one side, teachers and parents; on the other

side, specialists (scholastic psychologists and clinical psychologists, psychiatrists, doctors, neurologists and social workers) who assume the responsibility of reporting and describing the behavior" (Iudici, et al. 507). Additionally, Topkin, Roman, and Mwaba found that a psychologist or a medical practitioner is usually the person responsible for diagnosing the disorder.

There is a lot of controversy surrounding the ADHD diagnosis because of the subjective nature of its symptoms in collaboration with a diagnosis. Identifying ADHD as a disorder in children is not easy. The diagnosis itself is subjective because diagnostic tests do not accurately identify the disorder in a child (Iudici, et al.). A way to control for this, especially if the symptoms start to reveal themselves as early as preschool, is to expose children to structured and controlled classroom and home environments to prevent the downward spiral of having long-term symptoms and academic problems (Daley and Birchwood 456).

Misconception of Symptoms

The specificity of the symptoms and when they must be present and for how long is so important in order to diagnose the disorder. Although children are likely going to display symptoms in early childhood, this does not mean that they have ADHD: "The difference with ADHD is that symptoms are present over a longer period of time and happen in different settings" ("What Is ADHD?"). Daley and Birchwood even go on to say that kids who show symptoms specifically in toddlerhood may not develop the disorder. Even adults may learn to cope with their symptoms and continue into higher education despite an ADHD diagnosis or presence of symptoms in childhood (457). Many researchers also agree that the ideal age for diagnosis is when children have officially entered school, so around age six or later (Bringewatt 261). So, next time you see a hyperactive, outgoing child, don't assume that they have or will have ADHD, because chances are they're just being who they are: kids.

Stigma

Take all of the symptoms, the knowledge about the causes, and the diagnosis of ADHD and put them together and you find that, in some cases, a stigma gets attached to the disorder. Many people adhere to the stigma because it is all they know about the disorder, but studies have found that it affects the kids who have it. Iudici addresses this problem when she says that the only problem with an ADHD diagnosis is that it can turn into the "stigma" that can then affect the child's confidence and other people's judgments of the child. This label of "ADHD" may cause children to limit how they see themselves and buy into the self-fulfilling prophecy, which means that they believe whatever society says about them and their disorder (Hill and Turner 15). The problem that I find with the stigma is that it keeps people from seeing the child behind the disorder and recognizing that there is so much more to ADHD than just a "hyper" child. Bringewatt says it like this: medicating and diagnosing children can lead to a stigmatization of the disorder, drawing attention to the student rather than the difficulties that arise from having the disorder (262). In other words, the child is now seen as a problem and people miss the fact that there are things that children *can't help* having problems with as a result of their disorder. Because no one pays much attention to the difficulties the child has, not many people realize that the child needs assistance. Hill and Turner actually concluded through their research that a way to reduce the stigma was to inform more people about the difficulties (15).

An internet meme titled "ADHD: We think more things before breakfast than most people think all day" addresses another side of the stigma associated with ADHD. The whole "thinking more things before breakfast" factor is not the only one in a disorder like ADHD, but it is possibly the only thing that people may know about it. The stigma is also slightly exaggerated to prove the overarching point of ADHD: these kids are constantly on the move and thinking about so much at one time. The meme mentions thinking so many things before breakfast; I don't know about you,

but I don't do much before breakfast. Do kids with ADHD really think that many things before breakfast? We may never know the true answer but we can be aware of the stigma and choose to do something about it rather than judge or laugh.

In describing the stigma associated with ADHD, a participant from Bringewatt's study said, "I was kind of embarrassed" (268). Many hid the diagnosis from friends and family as a result of feeling ashamed: "Many accounts of the stigma were focused on participants' fear of being seen as 'different' or 'separate' from their classmates" (269). They also experienced a fear of being labeled as "stupid," with one participant saying, "I didn't want to be labeled by my peers as being stupid or slow or something like that" (269).

Comorbidity and Processing Deficit

Even though ADHD is a single disorder in and of itself, it usually doesn't act alone in the life of a child. A child with ADHD often has other disorders as well—called comorbidity—processing deficits being the most common. Tarver, et al. even found that the comorbidity of ADHD with other disorders is present in about 50% of ADHD diagnoses (6). In another research study, children with ADHD were found to have "significant impairments" in sensory processing as well as in behavioral and emotional responses (Shimizu, et al. 343). Sensory processing is defined by the brain being able to "process and organize appropriate responses to information." Because children with ADHD may have certain processing deficits, they may have difficulties adapting to situations or participating in classroom activities because they are easily distracted.

In a class called Exceptional People at UF, I got to observe a simulation, taught by Richard Lavoie, of what it's like to have a processing disorder. He provided so much insight and made me think about what I thought I knew about processing disorders and completely wrecked your preconception. He explained processing disorders by using an example of a student named Stephanie.

For example, Mr. Lavoie asked the class, "Who was the first president of the United States?" He then explained that the kids without learning disabilities would start processing an answer while Stephanie processed the question asked. She thought, "Who? Okay, that means it's going to be a person. Was? That probably means he is dead. First? Okay, that means at the beginning. President of the United States? Oh, okay, I know that, it's George Washington." She raised her hand but by that time everyone else had gone to recess.

What people don't realize about processing disorders is that these children have twice the processing load to do. The breaking apart of questions, in the way that Mr. Lavoie presented it, is how many children with ADHD who have these deficits think about every single thing that they are asked. Can you imagine your brain going through that many steps day in and day out? These deficits include problems with working memory (active listening and processing), responses, planning, and organizing (Tarver, et al. 3). Children may also have difficulty adapting to situations or participating in classroom activities because of these deficits (Tarver, et al.).

Put yourself in Stephanie's shoes. Why do you think she would have problems with organization or responding to questions? Because she has to think twice—literally. By the time she processes what she needs or what question she needs to answer, the class is already halfway through whatever activity they were moving on to.

Another example that helps explain processing deficits is about a student named John. His case illustrates the difference between a child who is distractible and a child who has attention span problems. The child who has attention span problems pays attention to nothing while the child who's easily distracted pays attention to everything. John might be sitting there listening to me and paying attention to what I'm saying but he's also interested in my shoes, my tie, and the picture behind me. He can't focus on one thing. That being said, some children with ADHD can't focus on language because of the processing deficit.

While the previous example mentioned a student named John, it directly applies to Denise,

whom I interviewed, and her son Carlos with ADHD. In our interview, Denise mentioned that Carlos's teachers would tell her that he looks at them when they talk to him (because he is being polite and is not a rude kid), but they can tell the clockworks in his brain are moving and thinking about something else. She said, "Carlos is very disorganized. He gets lost processing instruction. By the time he figures out what he needs to do, the other kids are already halfway done with the assignment" (75:09). For example, on many afternoons after school Denise had to sit in the school parking lot and be his accountability buddy. Carlos would walk up to the car with nothing in his planner, no books in his backpack, and yet he knew he had a quiz the next day so she would have to pry it out of him and ask him what books he needed and why. He was so focused on processing the teacher's announcement that he had a quiz that he didn't think about bringing home his book to study. He hadn't gotten to processing that information yet. It is not "in one ear, out the other," it is the comorbidity of a processing deficit on top of ADHD.

Classroom Impact/Symptom Manifestation

The symptoms of ADHD can manifest themselves differently in each child, but most of time you see a lot of similarities, especially at school. Imeraj, et al. say that the classroom is a "primary setting for the expression of problematic ADHD behaviors" (487). With that said, ADHD in the classroom can affect grades, reading skills, mathematical skills and standardized testing skills (Daley and Birchwood 457). Some characteristics of children with ADHD are that they have problems with note taking skills, strategies, concentration, motivation, and information processing (Daley and Birchwood 458). Children with ADHD are estimated to be able to focus in the classroom 75% of the time while their non-ADHD peers can focus, on average, about 88% of the time (Imeraj, et al.). Block, et al. say that children with ADHD may have problems maintaining their attention span and listening to others when spoken to, especially if it's in groups. Hill and Turner add that children diagnosed with ADHD have organization issues, problems remaining focused and seated in class, and they don't attend to details very well (13).

Teacher Role

There is no question that teachers play an incredibly important role in the life of a child with ADHD. Imeraj, et al. point out that they "seem to play an important role in adjusting the classroom environment to the specific needs of the child at risk for learning problems and to encourage classroom attention in different instructional settings" because "the school classroom has been identified as a primary setting for the expression of problematic behaviors in ADHD" (487). Topkin, Roman, and Mwaba point out that teachers are often the ones that refer the child to be tested for things such as ADHD. Denise even mentions that Carlos's teachers would notice behaviors that even she didn't: "I didn't see him as super hyperkinetic, but his teachers noticed that he was hyper in the fact that he had constant internal movements whether it was shaking his leg or tapping a pencil—he had to move." Carlos's first grade teacher also sat down with Denise and told her that she felt that Carlos was "constantly, internally distracted." Whether it is "creating an environment that is conducive to academic, social, and emotional success for children with ADHD" (Topkin, et al. 1), or pointing out problem behaviors to the parents for further referral, teachers hold one of the most important roles in the life of a child with ADHD.

Unfortunately, even though there are so many ways that ADHD manifests itself and impacts the child's performance in the classroom, many teachers don't accommodate for it properly. Topkin, Roman, and Mwaba even mention that it is because teachers lack knowledge and understanding, due to never having formal training on managing ADHD in the classroom that they don't adjust for it properly (8). These same researchers suggest that children diagnosed with ADHD "should have a differentiated curriculum and evaluation system that might enable them to progress at their own rate and at their own level, while placed in mainstream classes" (Topkin, et al. 2).

Teachers need to be aware of the facts of ADHD and how it affects children, since how they approach it can affect how others see the child. Denise says this about Carlos's experience: "Teachers at his previous school would pull him out of class and he would miss P.E. or recess and he suffered a lot socially because of that. The kids knew, 'Oh, here comes the therapist to take Carlos away' and it fed the stigma." Can you imagine how Carlos must have felt? If teachers were well trained and educated on the actual impact of ADHD, they might know how to better accommodate it. Training for teachers on ADHD should be continuous in order to ensure that they will be able to better manage ADHD in the classroom and promote the success of the child with the disorder (Topkin, et al.).

Teachers need to be aware of the facts of ADHD and how it affects children, since how they approach it can affect how others see the child.

Interventions

The teacher's role trickles into different intervention strategies for a child with ADHD because they are likely going to be the primary authority implementing different academic strategies at school while the parents handle treatment at home. Some areas for teacher intervention include peer tutoring, shortening the length of tasks, and setting goals for homework completion (Daley and Birchwood 460). Working in small groups may also help an ADHD child concentrate better (Imeraj, et al.).

The "What Is ADHD?" page at Nemours' *KidsHealth* site notes, "Kids with ADHD are eligible for special services or accommodations at school under the Individuals with Disabilities in Education Act (IDEA) and an anti- discrimination law known as Section 504." This law is actually the foundation for the idea to implement 504 Plans in schools. A 504 Plan is a form used to create a plan to accommodate a child's needs in the classroom if ADHD symptoms "substantially limit" a child's ability to learn. Included in this document are accommodations such as extra time, assistive technology, or therapy access.

In my genre analysis of a sample 504 Plan, I learned about real life examples of what it looks like to have "accommodations" for a learning-disabled child in the classroom. The specific accommodations in this plan included having the student complete either even or odd problems to keep the workload shorter, assigning a "buddy" to help the student make sure necessary materials such as books are brought home, having the student sit at the front of the classroom, and allowing extra time to complete tests. These educational interventions target the areas that this particular child with ADHD has problems or deficits in such as work completion, organization, behavior, inattention, and test taking. This plan as a whole helps paint a picture of the environment the child is in when in the classroom (i.e. sitting in the front away from the door, getting extra time on tests). Also, by listing a column to address the person responsible for implementing these plans, the 504 plan keeps the teacher accountable for making sure that the child is being accommodated for properly and succeeding in the classroom. Many of the participants in Bringewatt's study agreed that having extra time on exams and additional instruction in school, among other accommodations, was extremely beneficial to helping them cope with their disorder (268).

In our interview, Denise also discussed some of the strategies that she and Carlos's teachers have in place to help him both in the classroom and when working on assignments at home. She mentions sitting with his teachers to work through a type of 504 Plan to have Carlos sit in the front of the class, have special clues for when the teacher is giving him new instructions, and to tap his desk to get his attention. She also discussed being Carlos's "buddy" at home to help him get started on his homework. She said, "Part of the impulsivity is not reading the instructions and going straight to the homework problems. I would have to sit with him and get him started on the assignment, telling him to read the instructions out loud before starting anything" (80:03).

The 504 Plan is an extremely beneficial and useful resource for kids with ADHD and other learning disabilities because it pinpoints exactly where the child's problem areas are and how to best manage them; however, there are other methods of intervention that are not academic. For example, treatment for ADHD can also include medication and/or behavioral therapy (Daley and Birchwood 460). The government specifically recommends that behavior and psychological treatments should be the first course of action before any medication (Hill and Turner 13). During our interview, Denise had some interesting experience with medicating Carlos. She said, "I held off on medication but at one point Carlos started asking, 'Why am I so stupid?' and I realized, I need to give this kid a break. So I started medication, even though I didn't want to, but it did help him. Medication really does work but its effectiveness depends on if the disorder crosses over with other disabilities. At this point, at age 13, the medication wasn't very beneficial for him because he was mostly having issues with his math disability rather than hyperactivity" (57:53). Denise, without knowing, followed the government's advice on starting tutoring and therapy before diving into medication as a "quick fix." I think that it is important that parents make themselves aware of the different problems the child has and try to manage it as best they can before starting any medication. It helps the parent know where the child is at and if medication is really necessary. As noted at "What Is ADHD?", "By learning as much as you can about ADHD and building partnerships with others involved in your child's care, you'll be a stronger advocate for your child."

There is no sure-fire way for treating ADHD. Between medication and therapy, no one knows what to recommend first or when to recommend it. Hill and Turner say that, "priorities for future work should include the need to develop a nationally agreed protocol for a multi-professional approach to the assessment and treatment of ADHD" (21). Having people from a wide variety of disciplines agreeing on the same course of treatment for ADHD could be extremely beneficial because there would be less guessing and more doing. It also may not be too far in our future as more and more research is being conducted on the effectiveness of different strategies and interventions.

Conclusion

Seven years after asking his mom, "Why am I so stupid?" Carlos has been able to grow so much with the help of tutoring and academic interventions and strategies. He is learning to embrace himself for who he is and his disorder for what it is. Denise says this about his accomplishments so far: "He has improved through the years in that in the last three or four months he has started taking ownership of his academics. He recognizes that he has an issue, that he has a problem, and catches himself when he is in 'La-La Land.' He is starting to learn to not use his ADHD as a crutch and that has helped his self confidence" (91:36).

When I began my research on ADHD, my knowledge was about as deep as a kiddie pool. I only knew surface level facts that were coherent with the "hyper kid" stigma. My position on ADHD has shifted in the sense that I no longer find myself in the kiddie pool, but I now find myself swimming in the big Olympic-sized pool. My knowledge of ADHD has expanded to wider and deeper horizons that have helped shape my perspective in a new way. I no longer see ADHD as a disorder that kids need to fight through by trying harder, but as something that truly impacts many aspects of their lives. There are so many simple, easy ways to help and guide these children so that they can grow up and achieve their full potential.

As an aspiring pediatrician, it is likely that I will be conducting research in the future as I work toward that goal and even after I receive the title "M.D." If I were to further my own research on this particular topic, I would want to investigate the evaluation process: what tests, games, and areas psychologists test for and evaluate, and how, out of all of that, they determine a diagnosis. Perhaps I could find a way to observe an actual evaluation of a child, interview psychologists, and interview different children who have been diagnosed with ADHD to get first-hand knowledge and

see what they think about the whole process.

Additionally, what is the role of a peer in the life of a student with ADHD? I have looked at different strategies that parents and teachers can use to help a child, but the peer also plays an important role in the development of a child. I would want to specifically interview children to know how they feel about their friends knowing about their diagnosis, and in what ways those peers are supportive or not supportive.

While there is already so much research on ADHD, there are some questions only partially answered and some more unanswered questions. In the next few years as technology keeps advancing, maybe we will have a concrete answer to what causes ADHD. Just the other day scientists discovered 97 new brain regions—what if one of those regions holds our answer? Only time will tell.

Works Cited

Block, Robert W., et al. "Attention Deficit Hyperactivity Disorder (ADHD)." *Magill's Medical Guide*, Salem Press, 2016.

Bringewatt, Elizabeth H. "Hidden Diagnosis: Attention Deficit Hyperactivity Disorder from a Child's Perspective." *Advances in Medical Sociology*, vol. 13, 2013, pp. 259-79.

Daley, David and James Birchwood. "ADHD And Academic Performance: Why Does ADHD Impact on Academic Performance and What Can Be Done to Support ADHD Children in the Classroom?" *Child: Care, Health and Development*, vol. 36, no. 4, 2010, pp. 455-64. *EBSCOhost*, doi:10.1111/j.1365-2214.2009.01046.x.

Hill, Vivian and Horatio Turner. "Educational Psychologists' Perspectives on the Medicalisation of Childhood Behaviour: A Focus on Attention Deficit Hyperactive Disorder (ADHD)." *Educational & Child Psychology*, vol. 33, no. 2, 2016, pp. 12-29.

Imeraj, Lindita, et al. "The Impact of Instructional Context on Classroom On-Task Behavior: A Matched Comparison of Children with ADHD and Non-ADHD Classmates." *Journal of School Psychology*, vol. 51, no. 4, 2013, pp. 487-98. *ScienceDirect*. doi: 10.1016/j.jsp.2013.05.004.

Iudici, Antonio, et al. "The Use of the ADHD Diagnostic Label: What Implications Exist for Children and Their Families?" *Procedia - Social And Behavioral Sciences*, vol. 122, 2014, pp. 506-09. *ScienceDirect*. doi: 10.1016/j.sbspro.2014.01.1383.

Shimizu, Vitoria T., et al. "Sensory Processing Abilities of Children With ADHD." *Brazilian Journal of Physical Therapy*, vol. 18, no. 4, 2014, pp. 343-52. *Directory of Open Access Journals*, doi: 10.1590/bjpt-rbf.2014.0043.

Tarver, J., et al. "Beyond Symptom Control for Attention-Deficit Hyperactivity Disorder (ADHD): What Can Parents Do to Improve Outcomes?" *Child: Care, Health & Development*, vol. 41, no.1, 2015, pp. 1-14. 14p. *CINAHL Plus*, doi: 10.1111/cch.12159.

Topkin, Beryl, et al. "Attention Deficit Disorder (ADHD): Primary School Teachers' Knowledge of Symptoms, Treatment and Managing Classroom Behaviour." *South African Journal Of Education*, vol. 35, no. 2, 2015, pp. 1-8. *Education Source*, doi: 10.15700/saje.v35n2a988.

"What Is ADHD?" *KidsHealth*, The Nemours Foundation, July 2014, kidshealth.org/en/parents/adhd.html.

Karla Geigel

Karla Geigel is a sophomore at the University of Florida studying Biology and is hoping to pursue a career in pediatric medicine. Her passion for children and medicine originally came from being exposed to the work of her parents, who are both doctors, but it has since become a unique passion of her own.