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Academic and Social Outcomes of Utilizing Medication for Attention Deficit Hyperactivity Disorder: Representation and Intervention

Abstract

Attention deficit hyperactivity disorder since its inception has become a foremost diagnosed disability within the education system. This review seeks to examine the historical background, modern day prevalence, interventions, and the utilization of medications in order to target specific behaviors. This analysis also seeks to analyze how ADHD has become an over diagnosed disability. The review will investigate a case study following one student who has been diagnosed with ADHD and currently utilizing medication. The main focus of the research that was conducted will address the introduction of medication as a means of treatment and its effectiveness.

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Academic and Social Outcomes of Utilizing Medication for Attention Deficit Hyperactivity
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Representation and Intervention

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Representation and Intervention

Abstract

Attention deficit hyperactivity disorder since its inception has become a foremost diagnosed disability within the education system. This review seeks to examine the historical background, modern day prevalence, interventions, and the utilization of medications in order to target specific behaviors. This analysis also seeks to analyze how ADHD has become an over diagnosed disability. The review will investigate a case study following one student who has been diagnosed with ADHD and currently utilizing medication. The main focus of the research that was conducted will address the introduction of medication as a means of treatment and its effectiveness.

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Introduction

The term attention deficit hyperactivity disorder (ADHD) is synonymous with the American education system. Understanding the root causes of the disorder are consequently disputed due to the fact that ADHD is primarily diagnosed through observation. Attention deficit hyperactivity disorder has become a collective representation for over five million children ages three to seventeen in the United States. This review examines historical foundations of the disorder, how ADHD is represented within schools in conjunction with behavior interventions, and specifically why ADHD is increasingly being over diagnosed. This literature review will focus on how to develop and implement classroom-based intervention programs to assist students living with ADHD. This review will also break down social constructions of ADHD and how these influence teacher and student expectations and perceptions. Attention deficit hyperactivity disorder is a controversial topic within the education forum based on the notion that ADHD is possibly a socially constructed disability. Reasons to which I feel the need to review the research as well as conduct my own investigation are based in personal experience as well as the overwhelming number of students that are being diagnosed every year. I feel that (ADHD) and the stigma that it carries are creating a generation of students who are portrayed as fundamentally flawed and unaccountable for their own actions. As a teacher working in the classroom every day I am able to observe students who are labeled with (ADHD) currently utilizing medications and students who are not utilizing medications. My own personal observations are mystifying because the differences in behavior, academic performance, and social tendencies vary drastically from one student to another. As a disorder which seems to be ever-growing within the education system it is important to look at the historical foundations of (ADHD) and the effects whether positive or negative of utilizing medication.

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ADHD: Addressing the issue

Attention Deficit Hyperactivity Disorder (ADHD) is increasingly becoming a staple within the education system. Epidemiological research suggests that “3-7% of children in the United States can be diagnosed as having ADHD” (Dupaul & Stoner, 2006). Most educational classrooms contain on average 25 students per class, it is estimated that at least one student in every class lives with ADHD. According to Flick (2010), ADHD is one of the most widely known, extensively researched, and controversial behavior disorders. Attention Deficit Hyperactivity Disorder principal characteristics involve inattention, impulsivity, and over activity. These challenges for students consequently lead to difficulties concerning academic underachievement, high rate of non-compliance, and aggression (Dupaul & Stoner, 2006). Teachers and parents are frequently report that children living with ADHD consistently underachieve compared to their non-disabled peers (Barkley, 2006). Children that are diagnosed with ADHD as stated by Barkley (2006) up to eighty percent are at risk of underachievement academically as well as exhibiting performance problems. Of the eighty percent that are at risk academically thirty to forty percent of students are classified as learning disabled due to the “deficits in acquiring specific academic skills” (Dupaul & Stoner, 2006). For years within the medical community ADHD was viewed as a phase that children would outgrow behaviors before reaching adulthood. As children with ADHD progress into their teenage years the absolute frequency of their behaviors decline (Barkley, 2006). Although the frequency of behaviors decline the symptoms persist as well as manifest in different situations. As the symptoms persist documented by Barkley (2006) over sixty percent of adolescents with ADHD have been found to exhibit frequent defiance and non-compliance in regards to authority figures. Furthermore forty percent of teens that are living with ADHD are at greater risk of exhibiting “antisocial behavior,

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fighting, stealing, and vandalism” (Barkley, 2006). The significance of these results has proven that children that are diagnosed with ADHD will continuously be in jeopardy of grade retention, suspensions, and substance abuse. Attention Deficit Hyperactivity Disorder is too often attached as a disorder that only affects students in the school setting, but research has shown that ADHD is persistent disorder that has monumental effects on an individual’s personal life as well.

Historical foundation

In regards to addressing the issue that ADHD presents to students in the classroom, a focus on the evolution of the disorder must be investigated. Very hyperactive, restless, and inattentive children have been identified by clinicians and medical researchers dating back to at least 1902 (Mayes & Rafalovich, 2007). Since its inception ADHD has had over twenty different diagnostic labels applied. It was not until 1980 that the term Attention Deficit Disorder (ADD) was applied to children that exhibited these behavior types. The publication of DSM-III and the official “birth” of ADD inserted a degree of psychiatric legitimacy into the discussion of childhood hyperactivity and impulsivity (Mayes & Rafalovich, 2007). It was not until 1987 that hyperactivity was added to distinguish between the two disorders. Early studies concluded that ADHD was a defect in moral control and was not necessarily an individual shortcoming but a matter of biology (Mayes & Rafalovich, 2007). This marked the beginning in which the disorder was viewed as an issue of science rather than perspective. (Mayes & Rafalovich, 2006).

Diagnosis and Subtypes

Currently ADHD is the most frequently and common disorder that is diagnosed within the education system in the United States. Attention Deficit Hyperactivity Disorder was once

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considered a disorder that did not present adverse academic problems to students. It was not until the 1990 reauthorization of IDEA that ADHD was outlined under the disability category of other health impairment (OHI). The efforts to obtain special education services stemmed from the “tremendous risk for academic underachievement, failure, retention, and negative social outcomes” (Barkley, 2005). Attention Deficit Hyperactivity Disorder falls under the classification of other health impairment (OHI) outlined in the Individuals with Disabilities Education Act (IDEA). IDEA’s definition of other health impairment includes:

having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment , that is due to the chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, and sickle cell anemia , and adversely affects a child’s educational performance. (34 code of federal regulations, 300. 7 © (9))

In order to qualify for special education services the disability must adversely affect his or her educational performance. This notion that the disability must have undesirable consequences on the academic performance might be an indicator as to why ADHD is becoming frequently over diagnosed. Attention deficit hyperactivity disorder is viewed more often as a performance problem rather than an ability deficit (Dupaul & Stoner, 2006). This represents a core issue of ADHD as it pertains to academic performance of individuals that are diagnosed with ADHD. These students have the ability in order to achieve success within school; they just don’t know how to utilize their skills. The most frequent medical conditions under which students qualify for

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services as OHI are attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD). These conditions naturally lend themselves to the OHI classification in that both are characterized by an inability to focus, which usually contributes to decreased alertness to the educational environment (Grice, 2002). In regards to IDEA's definition of other health impairment, an ADHD diagnosis will also take into effect the social implications. Individuals that are diagnosed with ADHD often have trouble and maintaining with interpersonal relationships with family and peers. A closer examination of the social aspect of ADHD has revealed that the individuals usually seem to have knowledge of what constitutes socially appropriate behavior. This finding has caused the conclusion that their social deficits are in performance rather than acquisition of behavior (Barkley, 2006).

With regards to diagnosing Attention Deficit Hyperactivity Disorder it is essential to take into account that this disorder has been conceptualized in a variety of ways over several decades. This has led to confusion within the medical community as well as educational professionals (Barkley, 2006). Within the classification of ADHD there are three distinct sub types. Within these subtypes there is a list that includes eighteen behavior symptoms. These types include ADHD predominantly inattentive type (ADHD-I), ADHD predominantly hyperactive-impulsive type (ADHD-HI), and ADHD combined type (ADHD-C). According to the statistical manual of mental health or DSM-IV-TR (2000), ADHD can be recognized in a variety of ways and is subject to the specific symptoms that the individual exhibits. Essential features according to the DSM (2000) include consistent patterns of inattention and hyperactivity that is more frequent than observed in individuals at a comparable level of development (Criterion A). Inattention and hyperactive features must be present before the age of seven (Criterion B). Impairments must be present in two distinct settings including home and school (Criterion C). Individuals that exhibit

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the ADHD classification under inattentive type have difficulty sustaining attention on tasks, often do not listen to directions, and are forgetful. The students living with ADHD inattentive type are described by teachers as sluggish, daydreamers, and socially withdrawn. It is estimated by Flick (2010) that about twenty to thirty percent of all those diagnosed with ADHD fall under this category. Characteristically these students receive poor grades due to the fact that assignments are incomplete, forgotten, or late. Students, who are diagnosed with this subtype, often show symptoms “associated with anxiety and depression as co-morbid disorders” (Flick, 2010). Individuals that are classified under hyperactive-impulsive type have trouble controlling inhibitions, are extremely active, and talk excessively. Children that are diagnosed with this type are usually described as having no self-control, always moving, and never paying attention. Children that are placed in the combined subtype exhibit symptoms that are identified in both inattentive and hyperactive-impulsive category (Dupaul & Stoner, 2006). Individuals within this subtype experience issues relating to both cognitive functions as well as behavior problems. This subtype is the most prolific diagnosed out of the three affecting fifty to seventy percent of all children with ADHD (Flick, 2010). It is essential that individuals suffering academically as a consequence of ADHD be given an equitable opportunity an appropriate education.

The DSM (2000) approach is supportive within the educational setting for the reason that the diagnosis can be used to predict the relative success of possible interventions, predict future behavior issues, and to suggest possible controlling variables (Dupaul & Stoner, 2006). It is also beneficial as the diagnostic criteria assesses in a standardized fashion which increases inter-professional agreement across multiple disciplines. It is fundamentally essential for children living with ADHD to have supportive professionals working together with a unified understanding of each particular case of ADHD. The diagnostic criterion lends itself to

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discussion of specific symptoms that are highlighted by teachers and parents as most important which will be the focus of treatment (Barkley, 2006). The DSM (2000) ultimately creates a reference guide in allowing for a team centered approach to assist children living with ADHD. It is imperative to take into account the limitations of the DSM (2000) approach. First, the criterion of this approach was created in the context of the medical model. This right away signifies that the problem lies within the child, therefore dismissing any environmental factors that play a role in maintaining problem behaviors (Dupaul & Stoner, 2006). The DSM (2000) foundation is based in psychiatric evaluations which essentially could lead to over identification if observation of behavior is the only method used. The DSM (2000) requires professionals (i.e., psychologists, school counselor, teachers) to encompass a specific set of skills essential in diagnosing ADHD. Ultimately the DSM (2000) criteria should be used as a supplemental resource included with an array of assessment methods that are “conducted across settings in order to determine specific problem behaviors, controlling variables, and environmental factors” (Dupaul & Stoner, 2006). The diagnosis aspect of ADHD has undoubtedly been scrutinized in its exclusion of social constructions due to the fact that the disorder is a medically stigmatized disability. One important aspect of the tests that are done in order to diagnose ADHD is that they are subjective in the performance that is being observed. Interpretation is the biggest variable in determining what behaviors constitute ADHD. The scale to which these children are being measured up against is inconclusive in the notion that one behavior is consequently measured at a higher rate than other. Observations such as the “student is always active and can be distracted easily” this describes every twelve year old who is inquisitive about their environment or someone who is motivated at a high level (Dupaul & Stoner, 2006).

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Causes

What causes ADHD is still considered a combination of factors that intertwine with each other. Most research that has surrounded the etiology of ADHD is focused on biological and hereditary factors (Barkley, 2006). Early research indicated that ADHD was caused by structural damage to the brain, specifically magnetic resonance imaging and position emission tomography. These studies have discovered that the prefrontal cortex which involves functions of behavior, in patients living with ADHD is less accessible to dopamine and norepinephrine, thus contributing to ADHD symptoms (Dupaul & Stoner, 2006). Close attention has also been paid to hereditary influences, as it is a disorder that “runs in the family”. Studies as stated by Barkley (2006) have shown that ADHD symptoms are increasingly present in immediate family members of children with ADHD. Heritability estimates are among the highest for any emotional and behavior disorder including schizophrenia and autism (Dupaul & Stoner, 2006). As hereditary and neurobiological factors play a role in the makeup of ADHD environmental factors have also been shown to influence what exactly causes ADHD.

Social Constructions

The social construction of ADHD lies within the foundation of how it is represented within society. The way in which ADHD is characterized across a culture can have irrefutable influences on a child’s behavior. School has become for most students the sanctuary where identities are produced and valued based on “vocalized interpretations of performance in school” (Danforth & Navarro, 2001). School professionals equate behavioral conformity with academic achievement. The student who follows the rules and works hard will achieve success. This ideological platform asserts that academic achievement equates to performance on assessment

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activities thus leading to a hierarchical grading system that rewards the “good students” who behave and follow the rules (Danforth & Navarro, 2001). This perpetual system puts students who are living with ADHD at a disadvantage even before they walk into the classroom. The basic premises of ADHD are that students who are diagnosed struggle with attention, retention of memory, and difficulty in acquiring specific skills. These are the basic necessities that are needed to achieve success based on the performance indicators that are currently in place within the education system. Academic achievement therefore is intrinsically linked with American culture in that success is measured by performance in school (Danforth & Navarro, 2001). Based on these assumptions that students are valued by how well they perform, children that are diagnosed with ADHD are therefore routinely viewed from a deficit model. This idea asserts that there is something fundamentally wrong with the child whether biologically, behaviorally, or mentally.

Within the everyday discourse, ADHD is continuously linked with negative connotations as researched by Danforth & Navarro (2001) during a study which involved thirty one special education students documented personal journals discursive events associating with ADHD taking place over an eight week period. Of the two hundred twenty four entries, one hundred and seventy six were discussions and forty eight of the entries represented the media. Three of the media accounts described an adolescent murderer diagnosed as a child with ADHD, parents sharing fears of their own children diagnosed with ADHD, and a psychologist mentioning the “childhood disease” of ADHD when describing a ten year old who killed a three year old (Danforth & Navarro, 2001). Subtexts such as these that are used in everyday discourse associating ADHD to deviance and unpredictability creates an image of a child living with ADHD as a subject in need of fixing. This societal construction reinterprets itself within the classroom where many professionals and parents alike believe that “changing the child’s

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behavior rather than the school environment” will ultimately provide a solution to the problem (Danforth & Navarro, 2001).

Social constructions ultimately materialize within the education system due to the fact that schools are essentially identity construction sites. School priorities are centralized around students who are able to conform to these expectations both academically and behaviorally. The students who do not fit the profile arouse suspicions of ADHD because they are unable to “stay focused, sit in a seat, turn in work on time, and cooperate with classroom procedures” (Danforth & Navarro, 2001). Constructions such as the ones expressed by Danforth & Navarro (2001) intrude on the perception that students who are active and unorganized must have ADHD. Teachers play a monumental role in perpetuating the notion that ADHD is as common within schools as it is perceived.

Teacher perceptions, expectations, and exposure

The expectations and perceptions that teachers set for their students strongly correlates with the academic achievement of their students. Most students that are diagnosed with ADHD are served within inclusive settings, yet over eighty percent of teachers that were sampled in a recent study recorded receiving no instruction in pre-service training concerning ADHD (Bussing et al., 2008). This dilemma extends from the separation of special education teacher preparation programs. General education teachers as stated before; can expect to have at least one student in the classroom that has been diagnosed with ADHD. This creates the need for special education teachers to produce effective and cooperative relationships with general education teachers, which is a difficult task. In order to address this issue teacher preparation programs need to conjoin with general education to create programs that addresses the ever-

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changing needs of students within schools today. The basis to issues such as these will shed light on how the perceptions that teachers hold concerning ADHD leads to underachievement of students and a precipitating need for seeking a diagnosis (Danforth & Navarro, 2001).

It has become an unproductive practice today within schools for teachers to self-conclude that students who are extremely active and unfocused must have a disability, specifically speaking to the American phenomenon of ADHD. This particular practice stems out from the high stakes movement that had crippled our schools since its inception. Teachers more than ever are feeling the pressure to mandate students to conform academically and behaviorally in order to deliver the information needed to pass the test. Teachers therefore reward traditional students that exemplify expected behaviors and exceed academic outcomes; this in return leaves students who typify ADHD symptoms at a severe disadvantage (Danforth & Navarro, 2001). In one particular entry researched by Danforth & Navarro (2001) related to the perception the teacher held of a first grade student (Jennifer). The teacher described Jennifer as a “hyper child who is difficult to control and strenuous to work with” (Danforth & Navarro, 2001). From the beginning the teacher referenced the words hyper, control, and strenuous. This negatively negates expected academic outcomes the teacher held for the student previous to self-labeling “Jennifer as being at risk of ADHD” (Danforth & Navarro, 2001). Jennifer’s mother would constantly receive notes home discussing her “bad days” relating to behavior. This reaffirms that schools and teacher expectations are set forth to determine appropriate behavior of students in the classroom. Jennifer’s teacher concluded that the problem was not school, the problem lied within Jennifer and consequent action must be taken in order to change the behavior and academic underachievement. The teacher, mother, and school principal met to discuss Jennifer’s continuous hyperactivity, academic performance, and problems at home. At the end of the

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meeting it was concluded that Jennifer had ADHD. There were no diagnostic tests, only observations of behavior made by the teacher. Jennifer's function within the general education setting quickly diminished as she was pulled to work independently with a special education teacher on reading and focus skills. The teachers recommendations based on the expectations and perceptions she held for Jennifer resulted in setting her up for failure in math, as Jennifer was missing crucial time in the general education setting (Danforth & Navarro, 2001). Jennifer's role in school was therefore constructed in a discourse of academic failure.

A study conducted by Bussing (et al, 2002) investigated sources of general education teachers experience working with students living with ADHD, assess teacher confidence with inclusion, and examine barriers to effective instruction. This study provides insight into how teachers perceived the disability. The main focus of the study was to demonstrate the correlation between teacher perceptions and experience intertwined with student academic underachievement. The population consisted of three hundred and forty nine general education teachers, which were given a survey addressing the issues stated above. Of the teachers that were questioned over ninety three percent stated that they have taught at least three students in the previous year diagnosed with ADHD. Within the same framework every teacher noted that they conducted self-study on the topic of ADHD. Of all participants that were questioned, over half stated that they have never once received training on servicing students living with ADHD in the classroom. In regards to teacher confidence the majority of the teachers reported that managing the "stress caused by students living with ADHD in the classroom" was the most difficult (Bussing et al., 2008). The second area was differentiating instruction to meet the needs of students diagnosed with ADHD in the classroom. The final area indicated was teacher's ability to successfully implement a behavior intervention plan, in which forty one percent stated that

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they had no confidence. The statistics alone of the teachers that were surveyed reveal a grave disconnect between what is understood concerning the aspects of ADHD and what is being practiced within the classroom. As ADHD is becoming more frequently diagnosed, a serious issue arises in whether the current structure of school is able to adapt to not only meet the needs of students living with ADHD but all students living with a disability. If teachers do not have the sufficient knowledge and understanding of what to expect when working with students living with ADHD or lack of training in practical techniques then students are unlikely to respond effectively (Bussing et al., 2008).

One aspect of the test questioned teachers on whether they believed that they taught students who were living with ADHD. Over eighty six percent noted that they taught at least two students with whom they suspected exemplified symptoms and behaviors related to ADHD but were not diagnosed (Bussing et al., 2008). Perceptions that teachers hold concerning the stigma of ADHD directly correlates with expected academic outcomes, ability, and progress of their students. Teachers who are unprepared to manage the challenges that are involved in adapting instruction and behavior plans for students living with ADHD will ultimately set the students up for failure. These teachers will therefore assume that the problem is contained within the student, not themselves nor the structure of school. Too often students living with ADHD are simple removed from inclusive settings because teachers are unable to effectively deliver instruction. This in part is due to the fact that the teacher might not have enough knowledge or experience working with students living with ADHD or that they view the student as a disruptive nuisance to the learning environment (Bussing et al., 2008)

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Behavior interventions

Given the challenging and sometimes perpetual difficulties that a child living with ADHD presents in the classroom it is essential that professionals take a systematic and ongoing approach to designing, implementing, and remedial stance when differentiating intervention strategies (Dupaul & Stoner, 2006). The first step in creating academic and behavior interventions with students living with ADHD is addressing our own assumptions. Teachers are conditioned to not allow social constructions or biases influence our perceptions of ability, academic expectations, and cognitive ability concerning students. In regards to ADHD, teachers must understand that ADHD is a critical issue that is associated with difficult to manage behavior that is ever-changing (Barkley, 2006). Children that are diagnosed will likely experience problems academically and socially throughout their school age years and beyond. The discourse of deficit must be erased and replaced with an educative approach focused on optimizing academic achievement and performance (Dupaul & Stoner, 2006). From this perspective teachers are able to educate students the necessary skills and knowledge to replace problem behaviors. Teachers who are able to adapt this approach into the classroom will be able to not just manage students living with ADHD, but employ student focused interventions based on skill acquisition. Implementing behavior support plans must be grounded in school wide positive behavior intervention systems (PBIS), this way it will be easier to initiate individual focused intervention strategies. The reason to which this is essential is due to the fact that the most common and relied upon strategies are based in punitive actions, such as verbal reprimands and removal from classroom. These strategies have been founded to only be successful when applied sparingly and within the context of a PBIS. The last assumption is that teachers who are working with students that are classified ADHD must have the knowledge and professional

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training in order to successfully design, include, and deliver appropriate strategies to maximize expected academic and behavior outcomes (Dupaul & Stoner, 2006).

In order to effectively create a PBIS, the needs of the student must be at the forefront of selection. Collaboration between a faction of professionals including parents, teachers, administrators, and psychologists must be delineated to ensure that strategies are implemented across multiple disciplines. A focus needs to be placed on “increasing the frequency of appropriate behaviors, not on decreasing disruptive behaviors” (Dupaul & Stoner, 2006). Finally, the student’s response to the intervention must be viewed as strictly unique as the result will not be known until after implementation (Dupaul & Stoner, 2006). One essential component that is based in the acquisition of skills is to intervene at the point of performance. In order to be optimally effective, strategies must be implemented at close proximity. Interventions further removed from target behaviors have been proven to be less effective (Dupaul & Stoner, 2006). Educators that are targeting specific behaviors need to avoid the practice of “one size fits all” (Dupaul & Stoner, 2006). A criterion to take into account includes student’s current level of academic skills, environment functions, target behaviors, and elements of the teacher’s delivery method.

As the collaborative team moves forward with initiating the PBIS, several issues must be taken into consideration. A thorough assessment must be concluded with the student in order to gauge the accurate and appropriate interventions. One assessment tool that can be utilized is a functional behavior assessment (FBA). This assessment focuses primarily on the function of the student’s behavior, specifically speaking what triggers certain behaviors. Once the function of the behavior is targeted, then an intervention plan can be individually designed (Dupaul & Stoner, 2006). Children diagnosed with ADHD need continuous and specific feedback. This

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correlates with intervening at the point of performance. Initial phases such as these should include contingency reinforcers that can be delivered continuously to the student in order to model appropriate behavior (Dupaul & Stoner, 2006). Positive interventions should be the main focus when delivering the contingencies interspersed with mild negative consequences. This process allows the teacher to effectively redirect the student utilizing specificity at the time of the targeted behavior (Dupaul & Stoner, 2006). It is important to whenever possible deliver redirections privately and in a calm voice.

The interventions described above specifically pertain to general classroom activities. When specifically targeting behaviors that are involved with independent work, many factors must be considered. Independent direction can prove difficult for students living with ADHD. Directions should be broken down into a few steps at a time. The teacher must also check for understanding several times to make sure that the student is on task. As it pertains to homework and projects, the work should also be broken up into smaller units. As the student gradually improves on targeted behaviors the amount of the work can be increased (Dupaul & Stoner, 2006). It is important to note that when targeting behaviors close attention must be paid to work completion and accuracy, “exclude rewarding behaviors such as sitting in seat or paying attention” (Dupaul & Stoner, 2006). This allows the teacher to monitor progress of academic outcomes as well as give the student opportunities to improve on organizational skills. It has become a common practice for teachers that are exasperated to give positive praise to students diagnosed with ADHD for not causing disruptions throughout class (Barley, 2006). Instituting reward programs can be useful in reinforcing targeted outcomes by giving the student opportunities to choose preferred activities. The teacher should meet with the student in order to “prime” before engaging in academic assignment periods (Dupaul & Stoner, 2006). To ensure

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that the intervention system is valid, constant monitoring and adjusting must be a continuous process to optimize results. Positive behavior intervention systems are an ongoing and ever-changing process that evolves as the student progresses through levels.

The basis for creating intervention plans stems from the need to increase the frequency of appropriate behaviors. Specific strategies that have proven effective include ignoring behaviors, verbal redirection, positive practice, contingency contracts, and self-management strategies. As intervention plans are initiated a contract should be created by both teacher and student. These contracts stipulate appropriate classroom behavior and expectations. This strategy could be intertwined with a token system which the student receives when the student exemplifies expected behavior outcomes as well as academic expectations. One aspect that is crucial when negotiating a contract with students is to allow the students to have a voice and to take part in the process. This enlists the student's cooperation and places an investment to exhibit the appropriate behaviors. Attention Deficit Hyperactivity Disorder is a disability that encompasses a range of behaviors that if paid attention to could possibly consume entire classes and result in the particular behavior becoming more frequent (Flick, 2010). Ignoring certain behaviors that are "mild in nature will, over time eliminate the need" (Flick, 2010). As a teacher decides to ignore the behavior it must be consistently ignored for as long as it continues. When attention is given to the student it will only increase the behavior as the student will try and get the same response. One of the most important outcome from targeting behaviors is providing students with the skills they need in order to "exhibit appropriate social and academic behaviors on an independent basis" (Dupaul & Stoner, 2006). Self-managed strategies incorporate self-monitoring and self-reinforcement disciplines as a means of providing the student a three tiered intervention plan to be utilized while monitoring own behavior.

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Who is representing ADHD?

In regards to representation of ADHD it is documented that males are twice as likely to be diagnosed as females. This bias lies within the theory that the criteria and guidelines focus on males (Collingwood, 2010). In 2005 a study was conducted reviewing gender differences in ADHD, the results showed that males exhibited higher rates of oppositional defiant disorder and females showed higher rates of separation anxiety. This therefore revealed that females are more likely to exhibit internalizing disorders (Collingwood, 2010). The biases surrounding gender differences can be seen in a survey given to educators in 2004 which revealed that eighty two percent of teachers believed that ADHD is more prevalent in boys. This means that four out of ten teachers find it more difficult to recognize ADHD symptoms in girls than boys (Collingwood, 2010). This mindset, which eighty two percent of educators believe ADHD is strictly a male representation of behavior can lead to over representation of the male population in ADHD classification. The belief that females exhibit strictly inattentive symptoms which lead to depression and anxiety is supported in the findings that females diagnosed with ADHD are five times more likely to be diagnosed with depression and three times likely to be treated for depression before the ADHD diagnosis occurs (Collingwood, 2010). One indication that males are being over diagnosed is the findings that teachers hold onto social constructions of ADHD. Teachers are more likely to refer male students for review than females. Gender biases play an important role in understanding how ADHD is being diagnosed and who is being diagnosed.

Prescription medications

One controversial issue that faces teachers and parents is the practice of utilizing medication in order to suppress the symptoms that are associated with ADHD. As researched by

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Dupaul & Stoner (2006) documented that over 1.5 million children are being treated by medication. As pressures of accountability and the number of diagnoses continue to increase, the allure of “medicating students” becomes increasingly enticing (Danforth & Navarro, 2001). The social side effects of using prescription medications such as Ritalin or Adderall as described in entries conducted by Danforth & Navarro (2001), phrases such as “zombies, space cadets, or zoned out” were used at a high frequency. The medical effects of utilizing medication can range from nausea insomnia, nervousness, headaches, and weight loss. In fewer cases, subjects have reported slowed growth, tic disorders, and problems thinking with social interactions (Danforth & Navarro, 2001). Numerous studies have consistently demonstrated short-term enhancement of behavior, academic, and social functioning as a determinant of medication (Dupaul & Stoner, 2006). The issues surrounding the use of medication is that it provides short term solutions to a growing problem whether based in medical research or social constructions. In essence being able to assess the effectiveness of using medications can only be done through observations and therefore are subjective. In my own experience I have had numerous teachers disclose personal opinions that children who exhibit uncontrollable behavior should be placed on medication. I feel that the stigma surrounding medications and ADHD are leaving teachers with a first resort solution to control kids in the classroom.

Method

In order to effectively assess the effects of utilizing medication, I have conducted a case study in which I observed a student who has been diagnosed with ADHD and is currently utilizing medication in order to curb specific behaviors. Data will also be collected by interviewing the student and one of his current teachers. I have created interview questions that

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are specifically designed for each participant. All participants have asked to remain anonymous and will be referenced in this research using pseudonyms. All participants who contributed in this research were notified of observations as well as documentation of research. The first portion of my research deals with observation of the student in an academic setting as well as a social setting. These observations have taken place over a four week period. I focused on specific aspects of the student's behavior in class, academic performance, and overall interest in the content that was being taught. The interview with the student took place in the school setting. I focused on Richards own interpretations of his overall academic performance before and after medication, his behavior socially, and his feelings regarding his disability. The interview I conducted with Richards's teacher Pamela focused on her observations and assessments of Richards's performance in the classroom.

Overview

Richard is a seventeen year old junior who attends a public school in a Rochester NY suburb. Richards's educational career has been riddled with three moves to different schools throughout area since he was in fifth grade. Richard lives with his mother and has two siblings that are younger in age. Richards parents divorced five years ago which coincidentally and precariously is the same time frame in which he was diagnosed as having ADHD. From the time that I spent with him I could tell that the divorce and the fact that his father is not a big part of his life is an emotional focal point that has tremendously impacted his development in many aspects of his life. Richard has been utilizing Ritalin for four years twice a day. Richard from a social standpoint is extremely outgoing and has several friends. He puts great value in his friendships and has very personable meaningful relationships with every one of his teachers, friends, and family members. Educationally Richard has struggled over the course of his career due mostly to

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the fact that he has changed schools three different times. School is an important aspect within his life and from the information I have gathered Richard's mother is extremely supportive and dedicated to his success academically. Richard plans to attend a four year university after graduation. I inquired as to what profession he will be pursuing, I was given two choices of either business or law school. Richard is a determined and motivated student. School is an important and necessary component of his life. Richard can from time to time be distracted with environmental factors such as friends, sports, and issues regarding his home life. Richard can be easily frustrated with information or assignments that he feels he cannot complete. Richard is issued in some classes a pass that allows him to take a break when work becomes to frustrating.

Objective Data

Child's name: Richard Smith

Date of Birth: September 3, 1994

Test Scores: Academic

- Basic Reading Inventory (BRI) (2/14/2011)
- Listening level 6 (instructional level)
- Qualitative Reading Inventory (QRI) (2/14/2011)
- Instructional upper middle school
- Wechsler Individual Achievement Test (WIAT)-III (12/20/2011)
- Math Fluency- Addition 82
- Math Fluency- Multiplication 73
- Math Fluency- Subtraction 82
- Math Problem Solving 82
- Numerical Operations 67
- Pseudo word Decoding 105
- Reading Comprehension 85
- Spelling 83
- Word Reading 102
- Reading Styles Inventory (3/29/2011)
- Analytical Tendencies- Moderate
- Auditory Strength- Excellent
- Global Tendencies- Moderate
- Kinesthetic Strengths- Good
- Tactile Strengths- Fair
- Visual Strengths- Excellent

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Results and Discussion

As discussed in my methods section, I conducted a case study in which I observed Richard over a four week period in both academic and social situations. I also completed an interview with Richard as well as his U.S history teacher Pamela. In regards to his disability and accommodations Richard is integrated in general education co-taught classes which include math, social studies, and English language arts. Richard is also placed in a resource room 5:1 every other day which provides extracurricular support. Richard is given extra time (1.5) on all assessments, both district and state and all reading passages are read aloud. Richard is tested in a location with minimal distractions and it is beneficial to have his desk placed at the front of the room close to the teacher.

In my observations I recorded that Richard is in need of constant checks for understanding and repetition of skills and concepts. One area that needs constant observation is organization. Richard tends to loose assignments that are needed on a daily basis for class as well as work taken home. Richard's ability to write effectively depends on his practice of elaborating details. Richard needs to be provided writing prompts to aid him in clearly organizing his ideas. Richard is provided guided notes as well as question prompts. The assignments that Richard is given are chunked to help with organization and clarity. Constant collaboration between special education teacher and general education is a necessary component to his success. In math Richard is provided a calculator for all work completed in class and on examinations.

Throughout the four weeks I was able to objectively observe Richard in his integrated classes. In class Richard is attentive to the teacher and is engaged in the content that is being presented if it is an interesting topic. One focal point that was evident was that he was easily distracted to external factors in the classroom and the hallway. When a disruption occurred in

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class it was difficult for the teacher to reengage Richard into the activity, classwork, or presentation that was being delivered. Richard tended to get off task very easily and had to be constantly redirected. One strategy that the teacher used was to give Richard a check list of assignments that needed to be completed in that class and therefore set out expectations. I found that Richard responded positively to this strategy in that he was able to visually and mentally know what he needed to do each class. As included in his individual education plan Richard was given a continuous pass that he used when classwork became to frustrating. I noted that when Richard used his pass it was always correlated to writing. I engaged him in a discussion inquiring as to what frustrated him when a writing assignment was placed in front of him. He responded that he has trouble keeping his thoughts together and that he consciously knows what he wants to say but has difficulty putting it on paper. Students that are diagnosed as having ADHD have trouble with being able to effectively process their thoughts and put them on paper. A method that he and I worked on was starting to infuse step by step writing outlines that would assist him in planning out his ideas. This was a helpful tool as he utilized it in both his U.S history and English language arts classes.

As a part of my case study I conducted two interviews with Richard and his teacher Pamela. My interview with Richard I focused in on the before and after effects of utilizing medication as a means to curve the target behaviors. My first question asked Richard what school was like for him prior to being diagnosed. He explained that school was extremely difficult. He was unable to maintain focus long enough to pay attention in class. Tests were the most difficult in that they called Richard to recall information previously learned. Richard told me that he wanted to do well in school but felt that he just was not smart as the other kids in class. As a result Richard developed a “class clown” persona in order to escape work or deflect

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questions. He was labeled as a student who was unwilling and resistant. I asked Richard what the biggest challenges were facing a student living with ADHD. He replied being able to focus on daily tasks in school and at home. My next question asked Richard what his feelings were towards being diagnosed with having ADHD. Richard answered that it was difficult because immediate feelings were that he was different and not normal. In a sense as Richard put it that he was relieved that there were other factors that were causing his inability to complete simple tasks at home and school. He explained that he was tired of letting his mother down academically and helping out around the house at home being the oldest male in the household. Richard discussed that he was aware that this was a serious crippling disability that has tremendous impact on academics as well as personal relationships. As Richard was diagnosed I inquired whether he felt that the medication was beneficial to his life. Richard first explained that he did not care for the taste but that he felt more focused and task orientated in regards to school. As he explained that he felt more under in addition to becoming more helpful around the house. Richard explained that academic tasks have become clearer in comprehension and that it felt easier in organizing his ideas and thoughts. I asked Richard if there were any side effects to taking the medication. He told me that he felt sometimes that he didn't have a lot of energy, almost "zombie like". He felt that he was not as outgoing as he once was. He explained that he did not have as many outbursts as he did prior to medication but that it left him feeling in his words not happy. Many kids that are diagnosed with ADHD also take complimentary antidepressants to cope with the feelings of sadness that some medications can have. I asked Richard whether he was prescribed any antidepressants and he answered that he was not.

In correlation with researching his behavior and academic performance I inquired how Richard's ADHD affected him from a social standpoint. I asked Richard whether his peers knew

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of his disability and if so did they treat him differently as a result. Richard replied that at first only his close best friends knew of the diagnosis. He explained to me that as he got older and ADHD was becoming more well-known stemming from television and social media that people assumed he had ADHD. He told me that kids would sometimes tease him asking if he took his medication today. Richard created defense mechanisms in which he became; as mentioned earlier the class clown. In my discussions with Richard on the social aspect, he continuously expressed to me that it has been difficult to make new friends. He feels that people only see his disability and not him as a person. In part he will take his medication solely on that fact that it decreases the frequency of outbursts in public. Richard explained to me that when in social situations he tends to feel high levels of anxiety and nervousness therefore he would regularly divulge information that in today's social standard would be considered inappropriate. Children that are diagnosed with ADHD are viewed as social outcasts because of their inability to cognitively process body language or social cues. Richard's own interpretations of his disability and the medication he is prescribed provided me with a profound understanding that although he continues to struggle both academically and socially he is receiving the accurate support from a medical and functional standpoint. ADHD itself is not compatible for a self-serving treatment method; it is a complex disability that requires a series of techniques that are geared to not correct the individual but to sustain continuous learning on many different levels.

The interview I conducted with Richard's teacher focused on academic performance. I wanted to inquire on how people that work with Richard on a daily basis interpret his ability and whether the medication is improving his overall lifestyle. My first question that I asked was whether she felt that medication was necessary in Richards's case. She replied that she felt medication helped immensely with Richard staying on task and completing his assignments.

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Pamela explained that she didn't know Richards academic performance prior to medication but that he still needs to be redirected a couple times each class. Pamela discussed that Richard has certain triggers that will allow him to get of task such as friends, new people in the classroom, and topics that he is interested in. Richard will from time to time shout out questions that have nothing to do with what content they are covering in class. This creates a disruption because other students will feed off the disruption and it takes a few minutes to redirect the class. I inquired as to the progress Richard has made throughout the year. Pamela divulged that Richard has maintained an eighty percent average throughout the year only dropping below when writing assignments were factored in.

I asked whether Richard sometimes forgot to take his medication on certain days and if he did what were those days like. Pamela paused and smiled as if to signal that those particular days were difficult. She told me that there has been several occasions when Richard forgot to take his medication. Richard on those days she explained would come in the classroom with a lot of energy asking many questions. You knew when Richard did not take his medication because the volume in class would increase ten decibels. The environment took on a whole new look in that he would be the focal point of the class as if they were feeding off his energy. These days she explained Richard needed someone by his side the entire class making sure he stayed on task and completed his assignments. The challenge as she put it was to maintain a level of calmness in the room as to not trigger his outbursts. She told me that she felt a great deal of her class time was directed towards him and she felt exhausted after. I asked her again whether she felt that the medication was a necessary component allowing her to recant her trials and tribulations which she replied yes, but with a combination of behavior and differentiation strategies.

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Conclusion

In concluding my case study I feel that I effectively researched ADHD as an academic and social disability characterized by the utilization of medication. My observations revealed a majority of my information that I accumulated. In the four weeks that I was able to observe Richard in both academic and social situations I have come to the conclusion that utilizing medication as a means to curb target behaviors is a necessary component but must be analyzed on a case to case basis. I feel that with ADHD especially in the disability realm, we as educators and mainstream society are too quick to categorize the individuals that struggle with it into a one shoe fits all treatment process. As I was researching, writing, and observing I couldn't help but remember a quote I heard in the beginning of my special education studies in that if you have met one child with Autism then you have met one child with Autism. I feel that this applies to ADHD as well. Richard executes many of the same behaviors that a person diagnosed with ADHD would exemplify but on an individual level Richard is unique in how he handles, interprets, and reacts to the disability. I was extremely impressed with Richard's understanding of his disability and the perspective that he holds on not allowing the disability to define him. In reference to the utilization of medication I feel that what I observed and the information I gathered from Richard and his teacher that it acts as a support tool that needs to be intertwined with positive behavior intervention strategies as well as differentiation guided towards the way that Richard learns best.

Over the course of the four weeks Richard forgot to take his medication three times. On these particular days I was able to witness the differences overall on Richard academically and socially. On these days Richard had uncontrollable energy, was consistently unfocused, and at one point had to be removed from the classroom. As I computed the scene that was taking place

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in the class I also took into account the impact Richard had on his fellow classmates. I noticed that his peers were feeding off his energy and lack of attention on content. The dynamic of the class completely changed. The question of whether medication is a necessary component is one in which no parent is comfortable with answering. I continuously asked myself whether the medication was helping Richard become more successful in school. There are so many factors to include when asking that question because it can be as simple as Richard not responding well to the particular teaching style or a detachment of the content. My question was quickly answered after talking to his other teacher in which all divulged that Richard struggles consequently when not utilizing medication.

This topic in general is extremely personal. Throughout my educational career I struggled with my academics. I was never tested but several of my teachers as well as my doctor believed I had ADHD. It was the reluctance of my mother to place me on medication that kept me from being vindicated in the suspicions that surrounded my academic performance. I feel that every parent struggles to believe that their child has a learning disability and further more place their child on daily medications. In terms of my own experience which mirrors Richard's struggles I can honestly say that if given the opportunity I would have utilized medication to curve targeted behaviors. The analysis of ADHD has to be one of a case to case basis. Richard struggles immensely when medication is deleted from the problem. This is not to say that medication is the one and only answer, it is a contributing factor to the solution.

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