

Attention-Deficit/ Hyperactivity Disorder:

A Closer Look

by

Michael J. O'Neill

Submitted in Partial Fulfillment of the

Requirements for the

Master of Science Degree

with a Major in

Guidance and Counseling

Approved: 2 semester credits

Investigative Advisor

The Graduate College

University of Wisconsin-Stout

December, 1999

The Graduate College
University of Wisconsin-Stout
Menominee, WI 54751

ABSTRACT

O'Neill Michael J.
(Writer) (Last Name) (First) (Initial)

Attention-Deficit/ Hyperactivity Disorder: A Closer Look
(Title)

Guidence and Counseling Dr. Robert Wurtz 12/99 32
(Graduate Major) (Research Advisor) (Month/Year) (Pages)

American Psychological Association
(Name of Style Manual Used in this Study)

This paper examines Attention-Deficit Hyperactivity Disorder. More specifically, the aim of this paper is to discuss some of the many operational definitions of ADHD. In addition, this work focuses on the history, etiology, treatments, and interventions within the paradigm of Attention-Deficit Hyperactivity Disorder. An extensive review of the current ADHD/ADD literature was conducted and condensed into this thesis. In the final chapter, assertions are made toward the need for reform in how the medical and psychiatric communities deal with this extremely controversial and misunderstood disorder.

Acknowledgments

I appreciate the faculty who have helped guide me through my master's program at UW-Stout. I would especially like to thank Dr. Gary Rockwood and Dr. Robert Wurtz for all their expertise and professionalism over the years. Without them, none of this would be possible for me.

Dedication

I would like to dedicate this thesis to Michelle, Zachary and the Malone family, Mom and Dad, and my recently deceased brother Steve. I love you guys, and always will!!!

Table of Contents

Title Page.....	1
Abstract.....	2
Acknowledgments.....	3
Table of Contents.....	4
Chapter I: Attention-Deficit Hyperactivity Disorder.....	5
Definition.....	6
Chapter II: A Brief History of ADHD.....	11
Chapter III: Etiology of ADHD.....	15
Chapter IV: Treatment and Interventions of ADHD.....	20
Chapter V: Summation and Discussion.....	26

Attention-Deficit/ Hyperactivity Disorder: A Closer Look

Attention disorders, generally categorized as Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD), result from physiological differences in the brain that cause individuals to consistently display extreme inattention and impulsivity, and in many cases, hyperactivity. In preschool-age children, signs of inattention include excessive distractibility and inability to follow simple directions. Impulsivity is indicated by the inability to wait in line or take turns and reacting to even minor frustrations with physical aggression. Constant fidgeting, inability to settle down for quiet activities and constant motion are signs of hyperactivity (Hopkins-Best, 1999).

Attention deficit hyperactivity disorder (ADHD) is one of the most studied and controversial disorders in child development. This disorder, which is present in approximately 4 to 7 percent of the childhood population in the United States, is characterized by behavior difficulties such as inattention, impulsiveness, and hyperactivity. The child, or adult, with ADHD has problems starting, staying with, or completing tasks. The result is a life that may often be chaotic (Durall, 1999).

Attention Deficit Hyperactivity Disorder, one of the most common childhood disruptive behavior disorders, (DuPaul, 1991) is characterized by a consistent pattern of inattention and/or hyperactivity-impulsivity (American

Psychiatric Association, 1994). Impulsivity is characterized by impatience and is often expressed in frequent interruptions of others, difficulty in delaying responses, and intruding on others (Rapport, 1994). Children with ADHD typically make comments out of turn, fail to listen to directions, initiate conversations at inappropriate times, blurt out answers before questions have been completed, grab objects from others, touch things inappropriately, and have difficulty waiting their turn (American Psychiatric Association, 1994).

DSM-IV identifies the essential feature of Attention-Deficit/Hyperactivity Disorder as a persistent pattern of inattention and/ or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development. Some hyperactive-impulsive or inattentive symptoms that cause impairment must have been present before age 7 years, although many individuals are diagnosed after the symptoms have been present for a number of years. Some impairment from the symptoms must be present in at least two settings (e.g., at home and at school or work). There must be clear evidence of interference with developmentally appropriate social, academic, or occupational functioning. The disturbance does not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and is not better accounted for by another mental disorder (e.g., a Mood Disorder, Anxiety Disorder, Dissociative Disorder, or Personality Disorder).

Inattention may manifest in academic, occupational, or social situations. Individuals with this disorder may fail to give close attention to details or may make careless mistakes in schoolwork or other tasks. Work is often messy and performed carelessly and without considered thought. Individuals often have difficulty sustaining attention in tasks or play activities and find it hard to

persist with tasks until completion. They often appear as if their mind is elsewhere or as if they are not listening or did not hear what has just been said. There may be frequent shifts from one uncompleted activity to another.

Individuals diagnosed with this disorder may begin a task, move on to another, then turn to yet something else, prior to completing any one task. They often do not follow through on requests or instructions and fail to complete schoolwork, chores, or other duties. Failure to complete tasks should be considered in making this diagnosis only if it is due to inattention as opposed to other possible reasons (e.g. a failure to understand instructions). These individuals often have difficulties organizing tasks and activities. Tasks that require sustained mental effort are experienced as unpleasant and markedly aversive. As a result, these individuals typically avoid or have a strong dislike for activities that demand sustained self-application and mental effort or that requires organizational demands or close concentration (e.g. homework or paperwork). This avoidance must be due to the person's difficulties with attention and not due to a primary oppositional attitude, although secondary oppositionalism may also occur.

Work habits are often disorganized and the materials necessary for doing the task are often scattered, lost, or carelessly handled and damaged. Individuals with this disorder are easily distracted by irrelevant stimuli and frequently interrupt ongoing tasks to attend to trivial noises or events that are usually and easily ignored by others (e.g. , a car honking, a background conversation). They are forgetful in daily activities (e.g. missing appointments, forgetting to bring lunch). In social situations, inattention may be expressed as frequent shifts in conversation, not listening to others, not keeping one's mind on conversations, and not following details or rules of

games or activities.

Hyperactivity may be manifested by fidgetiness or squirming in one's seat, by not remaining seated when expected to do so, by excessive running or climbing in situations where it is inappropriate, by having difficulty playing or engaging quietly in leisure activities, by appearing to be often "on the go" or as if "driven by a motor," or by talking excessively. Hyperactivity may vary with the individual's age and developmental level, and the diagnosis should be made cautiously in young children. Toddlers and preschoolers with this disorder differ from normally active young children by being constantly on the go and into everything; they dart back and forth, are "out of the door before their coat is on," jump or climb on furniture, run through the house, and have difficulty participating in sedentary group activities in preschool classes (e.g., listening to a story).

School-age children display similar behaviors but usually with less frequency or intensity than toddlers and preschoolers. They have difficulty remaining seated, get up frequently, and squirm in, or hang on to the edge of their seat. They fidget with objects, tap their hands, and shake their feet or legs excessively. They often get up from the table during meals, while watching television, or while doing homework; they talk excessively; and they make excessive noise during quiet activities. In adolescents and adults, symptoms of hyperactivity take the form of restlessness and difficulty engaging in quiet sedentary activities.

Impulsivity manifests itself as impatience, difficulty in delaying responses, blurting out answers before questions have been completed, difficulty awaiting one's turn, and frequently interrupting or intruding on others to the point of causing difficulties in social, academic, or occupational

settings. Others may complain that they cannot get a word in edgewise. Individuals with this disorder typically make comments out of turn, fail to listen to directions, initiate conversations at inappropriate times, interrupt others excessively, intrude on others, grab objects from others, touch things they are not supposed to touch, and clown around. Impulsivity may lead to accidents (e.g., knocking over objects, banging into people, grabbing a hot pan) and to engagement in potentially dangerous activities without consideration of possible consequences (e.g., riding a skateboard over extremely rough terrain).

Behavioral manifestations usually appear in multiple contexts, including home, school, work, and social situations. To make this diagnosis, some impairment must be present in at least two settings. It is very unusual for an individual to display the same level of dysfunction in all settings or within the same setting at all times. Symptoms typically worsen in situations that require sustained attention or mental effort or that lack of intrinsic appeal or novelty (e.g., listening to classroom teachers, doing classroom assignments, listening to or reading lengthy materials, or working on monotonous, repetitive tasks). Signs of the disorder may be minimal or absent when the person is under very strict control, is in a novel setting, is engaged in especially interesting activities, is in a one-to-one situation (e.g., the clinician's office), or while the person experiences frequent rewards for appropriate behavior. The symptoms are more likely to occur in group situations (e.g., in playgroups, classrooms, or work environments). The clinician should therefore inquire

about the individual's behavior in a variety of situations within each setting (American Psychiatric Association, 1994).

Chapter II: A Brief History of Attention Deficit/ Hyperactivity Disorder

ADHD is one of the most misunderstood, misinterpreted, and misdiagnosed syndromes researched by professionals today. However, the disorder is treated as though it were some recently discovered esoteric phenomenon with life threatening properties; when in fact, it's just simply a facet of behavior. It is not as serious as most people or researchers wish us to believe (Calhoun Jr., Greenwell-Iorillo; et al., 1997).

Before 1900, only a few papers existed and described the cognitive and behavioral consequences of central nervous system injuries like trauma and infection. In the early 1900's, Englishman George Still was one of the first to shift attention to behavioral symptoms of the disorder as unnatural, relative to normal children at a given age (Pooley, 1995). He also described many children coming from what Dr. R Barkley, from the University of Massachusetts Medical School, has described as "a chaotic family life" and many others coming from "a seemingly adequate upbringing" (Barkley, 1990, p.4). The overall prognosis for these young people was pessimistic and "special educational environments" were encouraged.

ADHD has been prevalent for many generations, but under different names. Ebaugh (1923) was among the first to investigate this topic. Dr.

Ebaugh, a physician and Director of the Near-psychiatric Department of the Philadelphia General Hospital became fascinated with the disease “epidemic encephalitis” with respect to its affect on adolescents. In North America, a 1917-1918 epidemic of encephalitis left many children with substantial behavioral and cognitive losses that were similar to what we now consider ADHD symptoms. Clinicians continued to recommend treatment and care outside the home and outside normal educational facilities (Pooley, 1995).

Ebaugh found that children afflicted with the condition were: quarrelsome, hyperkinetic, impulsive, talkative, moody, irritable, incorrigible, and suffered from insomnia. His report is among the first to hyperactivity/hyperkinesis phenomenon. During the past 70 years, hyperactivity has shifted from one name to another. In the 30’s, the disorder was referred to as “restlessness,” “irritability,” “overactivity,” and Charles Bradley’s (1937) term, “organic behavior syndrome.”

Beginning in the late 1930’s, investigators here in the U.S. studied other possible causes and behavioral expressions of brain injury in children, noting that hyperactive children displayed similarities to those of primates with frontal lobe lesions, suggesting pathological defects (Barkley, 1990). This concept of a “brain injured child” was popular, and it drifted into the 1940’s. Clinicians advocated educating these children with “minimum brain damage” (MBD) in smaller, more carefully-regulated classrooms with minimal stimuli. We now know that more stimulation rather than less is the desired treatment environment for these disordered children (Barkley, 1990). Also in the 1940’s, the behavioral term of choice was “distractibility” rose to popularity (Strauss & Werner 1941), and (Strauss & Lehtinen 1947).

Clements (1966) indicated that since it was difficult to prove that a

child was afflicted with “minimal brain damage,” or “Strauss Syndrome” as it was commonly called. Perhaps, the term “minimal brain dysfunction” was more appropriate. In the 1950’s and 1960’s, the concept of MBD faded as it became recognized as too vague, too inclusive and of little help to indicate prognosis. More specific labels appeared to describe cognitive, learning and behavioral disorders (cognitive disabled (CD), Learning Disabled (LD), Behaviorally Disabled (BD), etc.). The concept of “the hyperactive child” rose to popularity in the later 1960’s, and a description of excessive activity level found its way into the American Psychiatric Association’s DSM-II in 1968.

Also in the 1960’s, noted researcher Stella Chess authored papers that emphasized a behavioral syndrome that may be a result of organic pathology. Her description included less serious or pervasive behavioral problems. Her recommendations for treatment encouraged a multi-modal approach including parent counseling, behavioral modification, psychotherapy, medication and special education (Barkley, 1990).

Interestingly, Chess and others suspected that the disorder was resolved by the onset of puberty (Barkley, 1990), although Dr. Parker reflects, “...we now know that a substantial number of hyperactive children will grow up to be hyperactive adults” (Parker, 1988, p. 1). Furthermore, Shekim (1990) contends that the course of ADD/ADHD among adults is extremely variable. The director of Mental Retardation and Child Psychiatry, Division of Pediatric Psychopharmacology at UCLA’s Neuropsychiatric Institute, Shekim also argues that one group of adults may have virtually undetectable signs and function normally, while another group may have significant problems in difficulties at work, in interpersonal relationships, family and marital strife, poor self-esteem, irritability, mood swings and depressive and anxiety

disorders.

Over 2,000 published studies in the 1970's still emphasized hyperactivity but also broadened discussion to include impulsivity, short attention span, low frustration tolerance, distractibility and aggressiveness (Pooley, 1995). Noted ADD/ADHD authority Barkley clarifies that, "These writings emphasized the lack of evidence for a syndrome, in that the symptoms were not well defined, did not correlate significantly among themselves, had no well-specified etiology, and displayed no common course and outcome" (Barkley, 1990, p. 12).

During the 1970's, rapid increase in the use of stimulant medications with hyperactive children was noted along with increased national publicity about this Ritalin treatment. Also during this decade, Congress passed the Vocational Rehabilitation Act of 1973 (Public Law, 93-112). Together these events seemed to heighten the nation's awareness of disabilities (Pooley, 1995).

Broadly speaking, the 1980's and 1990's have generated considerable literature, an explosion of learning intervention strategies and more clearly defined diagnostic criteria. The Diagnostic and Statistical Manual of Mental Disorders, Third Edition-Revised (DSM-III R), published in 1987, has four pages of specific information, explanation and diagnosis criteria about ADD/ADHD; the fourth edition (DSM IV), published in 1994, has eight pages. This suggests growing public and professional concern about this prevalent childhood disorder.

Chapter III: Etiology of ADHD

The etiology of this phenomenon has eluded researchers for decades. Physiological, sociological, and environmental theoretical perspectives have been exhausted in attempts to identify a link to the etiology of this dysfunction. The profession is no closer to the answer of causality now than they were half a century ago (Calhoun, Greenwell-Iorillo, et al, 1997). Goodman and Poillion (1992) conducted a comprehensive review of the literature to ascertain a professional consensus relative to etiology and characteristics. After surveying 39 literature sources, they identified that 69 different characteristics were attributed to children suspected of being ADHD. In addition, 38 possible causes were identified for just 25 reports.

Dykman and Ackerman (1993) concluded that there were three types of attention deficit disorder behavioral subtypes. The first was “attention deficit disorder- without hyperactivity” (ADD/WO). The second was, “attention deficit disorder with hyperactivity” (ADHD). The final subtype is, attention deficit disorder with hyperactivity and aggression (ADD/HA). This study further illustrates that if consensus is not reached soon relative to cause and characteristics, this confusion will continue to escalate and confound this already polemic topic. There is too much attention directed toward labeling

and classification issues and not enough energy devoted toward intervention and remediation strategies to help parents and educators manage the child at home and in school. Because of the attention afforded to labeling, too many students have been misdiagnosed and labeled when most are just being active healthy children (Calhoun Jr.; Greenwell-Iorillo; et al, 1997). Desgranges et al. (1995) discovered that scores of children were mislabeled because of many problems children face today in homes subjected to conflict. Some children identified as ADHD are actually suffering from other complications (conduct problems, poor home relationships, dysfunctional families, physical- sexual-verbal abuse, depression, school anxiety, etc.). Their investigation revealed that only 3 to 5% of all school age children really suffer from ADHD.

There are several theories that attempt to explain the cause of ADHD; however, most experts agree there is probably no single cause to explain the disorder. Instead, a combination of factors related to hyperactivity seem to interact in varying degrees to cause the disorder. These factors may include brain damage; poor or inadequate prenatal nutrition and care; maternal alcohol or drug consumption during pregnancy; malnutrition; abusive home environments; genetic factors; high levels of stress; food additives or allergies; and physical, neurological, or psychiatric conditions (Sealander et al., 1993). For educators and school counselors, causal factors have minimal, if any, impact on interventions; however, acknowledging the etiology often facilitates acceptance of the disorder and promotes willingness to try various interventions (Schwiebert & Sealander, 1995).

Dr. John Durall proposes that, neurobiologically, there is a developmental delay in very specific self-regulatory management areas within the prefrontal cortex of the brain. Research has begun to compare anatomical

pictures of the brain, MRIs, with score on psychology tests measuring inhibition response. (Response inhibition is the initiating major problem in ADHD). Researchers have found a significant correlation between lower scores of response inhibition on psychology tests and MRIs that often show a smaller right Caudate Nucleus and right Globus Pallidus in the right cortical-striatal-thalamic-cortical circuitry of the brain. This points to the possibility that people with ADHD may have functional and behavioral deficits that are related to anatomical variances in their brains.

In addition, during the infancy stages of development, the brain produces many excitatory messages causing a high level of motor activity with resultant increased drives for exploration. As the individual moves into and through the childhood years, these excitatory messages decrease and are replaced with inhibitory messages. Inhibitory messages allow the child to pause, think, recall, and resolve. (Remember that ADHD is a problem of inhibition.) This change parallels a normal maturational reduction of levels of dopamine concentrations from initial high levels to later reduced levels. Dopamine is a neurotransmitter that carries communications across synapses in the brain and is very important to the brain's braking or inhibiting system. Of significance is the fact that researchers have found that dopamine concentrations remain high and do not become age appropriately diminished in the brains of ADHD hyperactive boys. Other brain imaging studies, PET and SPECT scans, have also shown support of either structural or functional differences in an ADHD child's brain (Durall,1999).

David Henley reports that ADHD is a spectrum disorder, manifested in a variety of subtypes which are widely considered to be neurodevelopmental in nature. The salient feature-attention deficits with or without hyperactivity- is

“embedded in a complex array of neurocognitive and psychiatric vulnerabilities and complications” (Sandler, 1995). Without co-morbidity, ADHD’s features include inattention to others’ instructions or interactions, forgetfulness, impulsiveness, difficulties with organization or structure, mood lability, and low frustration tolerance, which may result in behavior (American Psychiatric Association, 1994). These neurobiological dysfunctions may be the result of dysregulation of certain neurotransmitters, such as dopamine or norepinephrine, which modulate information processing to the brain (Quinn, 1995).

Although the exact frequency of convergence of learning disabilities and ADHD is unclear, there is a high correlation between the two disabilities (Levine, 1987). Frequently, learning disabilities manifest themselves with situational variability, i.e., some areas of learning are easily mastered, while others remain elusive. For this reason, investigators, such as Barkley (1990), view ADHD as a motivational deficit, rather than purely a problem of attention.

Deviations in behavior may not be apparent when the child is alone, engaging in activities that reflect a personal interest. With no demands placed on them, children with ADHD may not present with behavioral difficulties until they interact with others, such as a teacher, a parent or a peer. Here, conflicts inevitably arise, for the child with ADHD has great difficulty dealing with what Barkley terms “rule governed behavior.” The incapacity to accurately interpret, and then follow, established rules required in social or school situations often results in interpersonal conflicts with authority figures or peers. The results may be non-compliance, oppositionality, or manipulative-type responses, which are tied to the child’s inability to self

regulate. Without self-regulation, a cycle of conflict and negativity becomes inextricably bound up with the child's relationship to others (Henely, 1998).

Further complicating this spectrum of difficulties are the co-morbid psychiatric or neurological disorders, which often accompany ADHD. Emotional disturbance and oppositional defiance disorders are found in 44% of children with ADHD, while obsessive-compulsive disorders with ADHD are found in 13%. Anxiety disorders also fall within the 13% range (Tzelepis, Schbiner, & Warbasse, 1995). The complex interrelationship between ADHD and other psychiatric illnesses underscore the need for multi-modal diagnostic and treatment strategies.

Chapter IV: Treatment and Interventions

Children diagnosed with ADHD need a comprehensive treatment-intervention plan that may or may not include the use of medication. When medication is indicated however, the most commonly used are central nervous system stimulants that include methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert) (Black, 1992). Ritalin and Dexedrine are usually dispensed to the student twice daily as directed by the physician. The peak effects of these medications occur in 2 hours after ingestion and dissipate within 4 to 5 hours. Cylert is a steady-state medication with effects lasting 7 to 8 hours (Gomez & Cole, 1991).

Of the stimulants, Ritalin is usually the medication of choice and prescribed for more than 90% of children receiving medication intervention (DuPaul, Barkley, & McMurray, 1991; Gomez & Cole, 1991). In assessing the efficacy of stimulant medication, DuPaul et al. (1991) reported that between 70% and 80% of children treated with stimulant medications respond positively to one or more doses. The remainder of the children (20% to 30%) treated with stimulant medications exhibited no response or their ADHD symptoms worsen.

When a child responds positively to medication, the observed effects include the ability to sustain attention to task and the inhibition of impulsive

responding. Medication also reduces a number of types of activity, especially task-irrelevant, nonproductive movements during work situations. Problems with aggression, classroom disruptive behaviors, and noncompliance with authority figures have also been shown to improve (Schwiebert & Sealander, 1995). Additionally, the quality of interactions between children with ADHD and their parents, teachers, and peers may improve significantly (Barkley, cited in DuPaul et al., 1991).

The use of medication intervention is not without some side effects. Some side effects may include appetite reduction and insomnia. Other, less frequently reported effects include increased irritability, headaches, stomachaches, and motor and vocal tics. In addition, behavioral rebound has been found to occur in about one third of the students taking medication. The rebound is a deterioration in conduct that occurs in the late afternoon and evening following daytime administrations of medication. To date, the only documented long-term side effect associated with stimulant medication is suppression of height and weight gain. With discontinuation of treatment, however, normal growth resumes. Researchers continue to study the effects of medication interventions (Schwiebert & Sealander, 1995).

Alternative medications, used less frequently than stimulants, include antidepressants, clonidine, and monoamine oxidase inhibitors. Clonidine is gaining recognition as a drug of choice for those individuals for whom Ritalin is deemed inappropriate because of side effects (e.g., tics) (DuPaul et al., 1991; Gomez & Cole, 1991). Studies are currently being conducted to substantiate the efficacy of its use. Regardless of the medication used, it is imperative that the effects be continually monitored and the data be reported to the physician and the family. School counselors may be in a

position to observe these medication effects or, as the coordinator of the school team, the school counselor may gather this information and report it to the parents or physicians. Objective methods of conducting ongoing assessments of children on medication should include teacher ratings, direct observation measures, curriculum-based measures, and assessment of behavior to discern possible side effects. In addition to medication therapy, other interventions to assist the student in social and academic skill building are necessary. Critical to the success of any intervention plan is the understanding that no single treatment modality is sufficient to bring about durable reductions in ADHD symptoms (Gomez & Cole, 1991; Kauffman, 1993; Sealand et al., 1993).

Another common intervention for children with ADHD is behavioral interventions (Gomez & Cole, 1991). Essentially there are two areas of behavioral interventions that focus on (a) antecedents of behavior and (b) consequences of behavior. The antecedents deal with characteristics of the environment, the task, and the events that proceed the behavior. Antecedent conditions include setting and environmental design issues such as type of type of class, for example, regular versus special class; the structure of the setting; seating arrangements; and characteristics of the task.

Consequence interventions involve the use of contingency management. The application of consequences contingent on specific child behaviors, or contingency management, has consisted of interventions such as token economy, contingent attention, and home-based contingencies. Additional strategies include group contingencies (strategies in which consequences for the whole group are contingent on specific behaviors of individuals), peer mediated interventions, time-out, response-cost, and over-correction (Schwiebert & Sealand, 1995). Contingent attention is the most

universally used management technique. In this technique, teachers and/or counselors give both positive and negative verbal feedback with a high degree of frequency. Negative consequences, such as reprimands, may be needed in addition to positive reinforcement for satisfactory behavior management.

Reprimands are most effective when they are given in a calm, firm, consistent, and immediate fashion. Additionally, eye contact, proximity, and overall professional posture increase the effectiveness of the reprimands (Abramowitz & O'Leary, 1991).

Token economies are an example of a consequence management program. A token economy involves awarding or removing token points to children depending on predetermined desirable or undesirable behaviors. The power of this approach to motivate children and to achieve an excellent level of on-task behavior and academic achievement is well documented (Fire, Beaker, & Near, 1993; Games & Cole, 1991). Combined with contingency management from counselors, teachers, and parents, token economies may significantly improve peer sociometric and teacher ratings of hyperactive behavior (Landau & Moore, 1991).

Another intervention, home-school contingencies, consist of programs that combine school and parent efforts to improve children's social behavior. Typically, a teacher completes a 3 to 5 item checklist that specifies whether the child has met identified behavioral goals for the day. The report is sent home, signed by the parents, and returned. The parents provide the appropriate consequence at home by applying contingencies that have already been developed (Schwiebert & Sealander, 1995). Advantages to this approach include daily communication between parent and teachers, it is not time consuming or costly, parents have access to a wider variety of potential

reinforces, and generalization of treatment may be enhanced because of the requirement of delayed gratification (Kelly & Career, cited in Abramowitz & O'Leary, 1991). The success of this intervention seems to be dependent on all involved parties understanding the procedure and on close cooperation between teachers and parents.

Peer-mediated interventions have several advantages over counselor/teacher-mediated strategies and may result in significant positive behavior changes. Advantages include the fact that students themselves may more closely observe each others' behavior, generalization of behavior across settings may be facilitated, and peer-mediated interventions are less time consuming for the counselor/teacher. Peer-mediated reinforcement and group contingencies can be divided into three types including (a) interdependent, in which the behavior of the entire group determines whether the group receives reinforcement; (b) independent, in which a set of contingencies is applied to the entire group, but each child's behavior determines his or her eligibility to receive reinforcement; and (c) dependent, in which the behavior of one or several target children determines reinforcement for the entire group (Sealand et al., 1993).

Time-out, response-cost, and overcorrecting are all punishment techniques. Time-out from positive reinforcement is a well documented and effective technique for reducing undesirable behaviors. Caution should be used, however, and careful planning and implementation are essential for the success of such a program (Schweibert & Sealand, 1995). Response-cost, a preferable type of contingency, is the withdrawal of privileges or rewards from the student. Over-correction, another negative consequence, requires the

student to make restitution or engage in a more appropriate form of behavior (Kauffman, 1993).

Chapter V: Summation and Discussion

In summation, ADHD is one of the most studied and controversial disorders in child development. The child, or adult, with ADHD has problems starting, staying with, or completing tasks. The result is a life that may often be chaotic. This disorder is present in 4 to 7 percent of the childhood population in the United States. Current research theorizes that ADHD is a developmental disorder of self-regulation. The person may show little hindsight, forethought, or preparatory action. This may cause serious impairments in social, academic, or vocational functioning (Durall, 1999).

That is not to say that ADHD is entirely a negative condition. The same brain functioning that causes problems for a child may also give that child qualities for success, such as intuition and spontaneity, excitement and energy, creativity and artistic skills. Some of the world's smartest, most creative and highest functioning adults have at one point been diagnosed with ADHD. A comprehensive treatment program, an educational understanding of ADHD, and a focus on the skills and positive qualities that the child possesses are extremely important for the child's success.

The zeitgeist for treating ADHD seems to be rapidly evolving. Where

once medications like Ritalin and Clonidine were apparently over-prescribed, alternate treatment paths are being taken. The foremost being behavioral contingency training. As reported earlier, this training must motivate the child to overcome the destructive impulses which they seek to gratify. Such programs are usually based upon offering tangible rewards, such as points, prizes, or privileges in return for compliance. The therapist and child agree upon a contract which spells out each desired behavioral objected, as well as the consequences of failure.

The use of behavioral contracting is not without limitations if utilized in isolation from other treatment approaches. Some researchers have found that all children, particularly those with ADHD, require a constant escalation of reward levels. These children become easily habituated by any long-standing stimulus (Linn & Hodge, 1982).

Personal experience from working with ADHD adolescents at a residential treatment center supports this assertion. It seems that the ADHD child loses interest at a higher level if the same “behavior equals reward” formula is maintained too long. Desired behaviors and compliance was increased when rewards were varied or rotated (i.e. Monday’s reward for earning all possible points was staying up until 9:30 p.m.; Tuesday’s reward for “perfect points” was quality one-to-one time with the staff member of the resident’s choice). But again, this intervention is not without flaw. Many children with emotional disturbance and conduct disorders see behavior modification as a form of low level bribery (Henley, 1997). This feeling seems to increase with the age of the child. Many ADHD children allude to the fact that they feel like a “lab rat in a maze”, or that they are “chasing a carrot on a stick while running on a treadmill.” Behavior training relies solely upon

external controls for motivation, but because the locus of control is external, coming from figures in authority, such procedures rarely become internalized, with the result that the child becomes reliant upon others for control. In addition, it is ethically troubling that this type of subtle bribery serves as the main impetus for appropriate behavior.

Etiology of this disorder is an elusive entity. It seems that the mental health community is nowhere close to consensus in this area. Physiological, sociological, and environmental theoretical approaches have been exhausted in attempts to identify a link to the etiology of this dysfunction. This may be because there is too much attention directed toward labeling and classification issues, and not enough energy devoted toward intervention and remediation strategies. Resultantly, there seems to be widespread misdiagnosis and mislabeling errors (regarding ADHD) across the medical world. Many “normal,” “active” children have been mislabeled as ADHD.

Most experts agree that there is no single cause to explain the disorder. Factors may include brain damage; poor or inadequate prenatal nutrition and care; maternal alcohol or drug consumption during pregnancy; malnutrition; abusive home environments; genetic factors; high levels of stress; food additives or allergies; and physical, neurological, or psychiatric conditions. It is important to remember that individual life circumstances for ADHD children are as unique and interrelated, as the varying combinations of etiological factors that contribute to this disorder.

In today’s climate of uncertainty and inconclusiveness regarding ADHD, it is important to recognize how much we have to learn to fully understand the dynamics of this disorder. The incredible amount of confusion over etiology and diagnosis of ADHD became very evident as this subject was researched.

Multiple future generations of young adults depend on our knowledge and professional exploration of this highly controversial disorder. It is imperative that we (the medical and psychiatric professions) attempt to ascertain a greater understanding of ADHD and censure the trend of over-diagnosing and over-labeling that seems to be diminishing, yet prevalent.

The importance of this topic cannot be stressed enough. M. Levine summarized the dangers of mishandling cases of perceived ADHD in children.

“So much is at stake. Children who experience too much failure early in life are exquisitely vulnerable to a wide range of complications. When these children are poorly understood, when their specific problems go unrecognized and untreated, they are especially prone to behavioral and emotional difficulties that frequently are more severe than the problems that generated them. It is not unusual for such children to lose motivation, to become painfully (and often secretly) anxious about themselves, to display noncompliance, to commit antisocial acts (including substance abuse and delinquent activity), and to lose an enormous amount of ambition” (LeVine, 1994).

When people lose ambition, they lose hope. And without hope, opportunity slips away as surely as death someday arrives (Pooley, 1995).

References

- Abramowitz, A. & O'Leary, S. (1991). Behavioral Interventions for the Classroom: Implications for the Students with ADHD. School Psychology Review, 20(2), 220-234.
- American Psychiatric Association. (1994). Diagnostic and Statistical Manual of Mental Disorders (4th ed.). Washington, D.C.: Author.
- Barkley, R.A. (1990). Attention-Deficit Disorder. New York: Guilford Press.
- Barkley, R.A. (1990). Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment. New York, NY: The Guilford Press.
- Black, S. (1992). Kids Who Can't Sit Still. The Executive Educator, 14(11), 31-34.
- Bradley, C. (1937). The Behavior of Children Receiving Benzedrine. American Journal of Psychiatry, 94, 577-585.
- Calhoun, G., & Bolton, J.A. (1986). Hypnotherapy: A Possible Alternative for Treating Pupils Affected with Attention-Deficit Disorder. Perceptual and Motor Skills, 63, 62-65.
- Calhoun, G., Fees, C.K., & Bolton, J. A. (1986). Attention-Deficit Disorder: Alternative for Psychotherapy? Perceptual and Motor Skills, 79, 79-80.
- Calhoun, G. & Greenwell-Iorillo, E. (1997). Attention-Deficit Hyperactivity Disorder: Mountain or a Mole Hill. Education, 118, 2, (244-252).
- Clements, S. (1966). Minimal Brain Dysfunction in Children: Terminology and Identification. Washington, D.C.; HEW.

Desgranges, K., Desgranges, K., & Karsky, K. (1995). Attention-Deficit Disorder: Problems with Preconceived Diagnosis. Child and Adolescent Social Work Journal, 2, 3-17.

DuPaul, G.J. (1991). Parent and Teacher Ratings of ADHD Symptoms: Psychometric Properties in a Community-based Sample. Journal of Clinical Child Psychology, 20, 245-253.

DuPaul, G. J., Barkley, R.A., & McMurray, M.B. (1991). Therapeutic effects of medication on ADHD: Implications for school psychologists. School Psychology Review, 20(2), 203-219.

Dykman, R.A. & Ackerman, P.T. (1993). Behavioral Subtypes of Attention Deficit Disorder. Exceptional Children, 60, 132-141.

Ebaugh, F.G. (1923). American Journal of Diseases of Children, 26, 89-97.

Fiore, T., Becker, E., & Nero, C. (1993). Educational Interventions for Students with Attention-Deficit Disorder. Exceptional Children, 60(2), 163-173.

Gomez, K. M., & Cole, C.L. (1991). Attention-Deficit Hyperactivity Disorder: A Review of Treatment Alternatives. Elementary School Guidance & Counseling, 26, 100-113.

Goodman, G., & Poillion, M.J. (1992). ADD: Acronym for Any Dysfunction or Difficulty. Journal of Special Education, 26, 37-56.

Henely, D. (1998). Art Therapy in a Socialization Program for Children with Attention Deficit Hyperactivity Disorder. American Journal of Art Therapy, 71, 1, 2-13.

Hopkins-Best, Mary. (1999). Attention Disorders. Adoptive Families, 32, 2, 51.

Kauffman, J. (1993). Characteristics of Emotional and Behavioral Disorders of Children and Youth (5th ed.). New York: Merrill.

Levine, M. (1994). Educational Care: A System for Understanding and Helping Children with Learning Problems at Home and in School. Cambridge, MA: Educators Publishing Service.

Levine, M. (1987). Developmental Variation and Learning Disorders. Cambridge, Massachusetts: Education Publishing Service.

Linn, F. & Hodge, G. (1982). Locus of Control in Childhood Hyperactivity. Journal of Consulting and Clinical Psychology, 50, 592-593.

Pooley, W.H. (1995). Use or Impediments to the Use of Selected Classroom Interventions for Students with ADD/ADHD (pp. 15-18).

Quinn, P. (1995). Neurobiology of Attention-Deficit Disorder. In K. Nadeau (Ed.), A Comprehensive Guide to Attention-Deficit Disorder in Adults. New York: Brunner Mazel.

Rapport, M.D. (1994). Attention-Deficit Hyperactivity Disorder. In V.B. Van Hasselt & M. Hersen (Eds.), Advanced Abnormal Psychology (pp. 189-206). New York: Plenum

Sandler, A. (1995). Attention Deficits and Neurodevelopmental Variation in Older Adolescents and Adults: A Comprehensive Guide to Attention Deficit Disorder in Adults. New York: Brunner Mazel.

Schwiebert, V. & Sealander, K. (1995). Attention-Deficit Hyperactivity Disorder: An Overview for School Counselors. Elementary School Guidance & Counseling, 29, 4, 249-261.

Shekim, W. (1990). Parents of ADD/Hyperactive Children. Adult Hyperactivity, 12-15.

Strauss, A.. (1951). The Education of the Brain-Injured Child.

American Journal of Mental Deficiency, 56, 712-718.

Strauss, A. & Kephart, N. (1955). Psychopathology and Education of the Brain-Injured Child. Vol II. Progress in Theory and Clinic. New York: Grune and Stratton.

Tezelepis, A., Schubiner, H., & Warbasse, L., (1995). Differential Diagnosis and Psychiatric Comorbidity Patterns in ADD. In K. Nadeau (Ed.), A Comprehensive Guide to Attention Deficit Disorder in Adults. New York: Brunner Mazel.