SELECTED INTERVENTION APPROACHES AVAILABLE FOR CHILDREN DIAGNOSISED WITH ATTENTION DEFICIT AND HYPERACTIVITY DISORDER

by

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ABSTRACT

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Abstract

This study had a two-fold purpose. First, to review, analyze, criticize, and draw sets of implications from literature regarding material on multimodal intervention approaches for students who had attention deficit-hyperactivity disorder. Second, to determine strategies that would benefit educators, parents, and ADHD students so they are learning in their optimal learning environment. Conclusions were drawn and recommendations provided to educators and parents in order to assist ADHD students to have an environment where they may be academically and socially successful.

In the introduction, a clarification on what ADHD is, the history of ADHD, the prevalence rate of ADHD, and why it is important to use a multimodal treatment approach was presented. Following this, numerous ADHD intervention approaches were critically reviewed, analyzed, and critiqued.

Conclusions and recommendations from this study were directed toward practitioners, educators, parents, and ADHD students. However, all educators, parents, and students who prefer a more structured and optimal learning environment will benefit from this study.

The findings in this study revealed that practitioners, parents, educators, and students need to collaborate and communicate on a regular bases for ADHD students to perform at an optimal level. It was also found that ADHD students perform better in school and at home when they have a structured, consistent, and organized environment. Finally, it is important for practitioners, parents, and teachers to be aware of the many intervention approaches for ADHD children. The more aware they are, the more likely they will use a multimodal intervention approach. The best results are obtained when behavioral management, classroom management, family therapy, and medication, when needed, are used together to help the ADHD child.

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CHAPTER I

Introduction

Through the mid-1980s many children affected with attention deficit and hyperactivity disorder (ADHD) went undiagnosed, and untreated. Their problems were suggested as reflecting poor motivation, ineffective parenting, or simple disobedience. The rate of referral for these problems has increased, as reflected in the dramatic increase in the use of stimulant medications for the treatment of ADHD symptoms. Some have suggested that perhaps the pendulum has swung in the other direction, resulting in inappropriate diagnosis and treatment for ADHD children whose inattentive or impulsive problems result from other disruptive or nondisruptive disorders (Goldstein & Goldstein, 1998). Nonetheless, despite increasing recognition of potential misdiagnosis, the trend continues.

Many researchers today believe ADHD is over-diagnosed. While up to 15% of today's children are treated for it, the actual prevalence is only 3 to 5% (Buttross & Morgan, 1998). With 1987 census data indicating that 45 million children are enrolled in public and private schools, the number of children affected by ADHD attending school within the United States could range from 1.35 to 2.25 million children; most likely every classroom has 1 to 2 children with the disorder (Parker, 1998). ADHD affects people of all ages, of both genders, and from a diversity of cultural and racial backgrounds. The gender differences when it comes to ADHD are that boys are anywhere from 4 to 9 times more likely than girls to have ADHD (Everett & Everett, 1999). There are, of course, selective issues here, in that males more commonly display the hyperactive and impulsive

symptoms related to behavioral disturbances and conduct disorders. Thus these males tend to be referred more frequently for clinical services than females.

Medical and psychiatric practitioners first recognized the symptoms that define our present understanding of ADHD in the late 19th century. In the 1900s patients who had experienced neurological damage either through trauma or central nervous system infections displayed behaviors that typically included hyperactivity, impulsivity, and distractibility, and therefore the disorder was originally termed brain damage (Everett & Everett, 1999). There have been many different terms for ADHD throughout the years. In 1940, the disorder at that time was called minimal brain syndrome, 1955—hyperkinetic impulse disorder, 1960—minimal brain dysfunction, 1968—hyperkinetic reaction of childhood (DSM III), and in 1987 they came up with the term that is currently used by the DSM IV, ADHD (Parker, 1998).

Currently, the Diagnostic and Statistical Manual of Mental Disorders (DSM IV), published by the American Psychiatric Association (1994), specifies criteria that need to be met to be diagnosed as having ADHD. There are three subtypes of the disorder: combined type; predominantly hyperactive-impulsive type; and predominantly inattentive type.

The combined type and predominantly hyperactive type make up around two-thirds of individuals with ADHD. Individuals with the predominantly inattentive type have problems with attention span, but not hyperactivity or impulsivity. To be diagnosed with any three of these types, the symptoms must have been present before age seven, impairment from these symptoms must be present in two or more settings (i.e., at school,

work, and at home) and must not be the result of another medical or psychiatric disorder (DuPaul & Stoner, 1994).

ADHD is a syndrome, a cluster of symptoms that include short attention span, difficulty concentrating, poor impulse control, distractibility, and moods that change quickly (Friedman & Doyal, 1987).

The most recent diagnostic criteria for ADHD as defined in the DSM-IV stipulate that individuals have had their symptoms of ADHD for at least six months and that these symptoms are to a degree that is developmentally deviant, and that they have developed by seven years of age. From the inattention item list (forgetful, easily distracted, loses things, avoids work, not organized, does not listen to instructions, does not pay close attention to details, does not seem to listen), six to nine items must be endorsed as developmentally appropriate. From the hyperactive-impulsive list (fidgets, leaves seat, runs, climbs excessively, difficult playing, "on the go," talks excessively, blurts out answers) six of nine items, must be endorsed as deviant (DSM- IV, American Psychiatric Association, 1994). Depending on whether criteria are met for either or both symptoms lists will determine the type of ADHD that is to be diagnosed: predominantly inattentive, predominately hyperactive-impulsive, and combined type.

There is no apparent single cause of ADHD (DuPaul & Stoner, 1994); ADHD has multiple causes. Some likely causes or contributing factors of this order are brain dysfunction, various psychological causes, and many other biological causes. Some biological causes may include food substances, environmental toxins, allergens, and difficult temperament. Research has yet to clearly and reliably point to any specific biological or environmental cause. Most studies concur that there is a clear genetic

transmission factor in most cases of ADHD (Everett & Everett, 1999), and available evidence also suggests that ADHD may be caused by various neurologic, and neurochemical factors (Erk, 1997). Research findings that demonstrate the inefficiency or imbalance of several neurotransmitters and lowered glucose metabolism in the brains of ADHD patients; decrease blood flow to the striatum and prefrontal regions of the brains of ADHD children (Aust, 1994), support neurobiological bases. Other factors, such as other medical conditions, medication side effects, or familial functioning may contribute to the disorder or to the development of ADHD-like problems in some children (Parker, 1998). Despite popular opinion, the consumption of sugar, food additives and dyes, vitamin deficiencies, lead poisoning, birth complications, and brain damage are no longer considered significant causes of ADHD, although in some cases they may exacerbate existing ADHD symptoms (Aust, 1994).

Since ADHD can be diagnosed in approximately 3 to 5% of school-aged children, there is pressing need for school personnel to be knowledgeable about the disorder and to have the ability to implement effective treatments and interventions. The most common treatment of ADHD is a medication called methylphenidate (Ritalin). Although about 70 to 80% of children treated with Ritalin exhibit reductions in ADHD-related behaviors, medication alone is simply not a sufficient therapy (Baren, 1989); often more than one intervention is necessary.

Most of the time we take medication to cure a condition. Unfortunately, there is no known medical cure for ADHD; it can only be managed. The best that medication can do is to alleviate the core symptoms of the disorder: inattention, impulsivity, and over activity (Parker, 1998). A multimodal treatment plan is usually required in order for a

child to be successful. Again since medication is not a sufficient therapy when used alone, other interventions need to be implemented. Common interventions for ADHD children may involve one or more of the following procedures: medical management, behavior modification, cognitive-behavior therapy, social skills training, counseling, family therapy, and the implementation of appropriate educational interventions (Parker, 1998). Intervention strategies must be individualized based on the functions of specific behaviors, the age of the child, and the needs and practical constraints of the classroom (DuPaul & Eckert, 1997).

Statement of the Problem

Consistent with the literature regarding the effects of treatment/interventions for children with ADHD, there is controversy as to whether or not medication alone is the most effective treatment for children with ADHD.

Purpose of the Study

This study has a two-fold purpose. First, to do a comprehensive review of the literature, and draw sets of implications from literature on the subject of multimodal intervention approaches for students who have attention deficit-hyperactivity disorder. Second, to determine common strategies identified for educators, parents, and students by the researcher for assisting children with ADHD to reach their optimal learning environment to be successful academically and socially.

CHAPTER II

Review of Literature

Introduction

Children with ADHD are at high risk relative to the normal population with respect to academic and social failure in the school environment (DuPaul & Eckert, 1997). Thus, school professionals and parents are in need of effective strategies for managing behavior and improving academic performance for students with ADHD. Treatment of ADHD often requires behavioral and educational interventions, individual and family counseling, and the most common and effective treatment, when using a multimodal approach, is medication.

Communication and Collaboration

Communication and collaboration between home and school are vital aspects of successful education for all students in the elementary and middle school age years. Effective communication, consistency of goals and incentives, and collaborative planning and evaluation are even more essential for students who have ADHD, than the so-called, normal student (Nahmias, 1995).

Parents are just one member of the team that is valuable in the partnership with educators and other professionals both at school and in the community. For students with ADHD, there may be one or more key educators and other professionals outside of the school environment who assist these students and their parents and families with the difficulties they encounter. Classroom teachers, special educators, special area teachers, school staff, counselors, and nurses may all be involved. Outside of school, professionals

such as physicians, psychologists, or counselors may also play a role in the student's educational success.

According to Nahmias (1995, p. 241) in order "to achieve optimal planning and implementation" of the interventions and treatments discussed by the researcher," "services and systems to meet the educational ad developmental needs of students with ADHD, communication and collaboration among parents, school personnel, and community based professionals is essential."

Section 504

The general aim of Section 504 rule is to provide a regular or special education and related aids and services necessary to meet the individual educational needs of handicapped students as adequately as the needs of non-handicapped students are met (Fisher & Beckley, 1999). A "handicapped person" is defined as, "any person who has a physical or mental impairment which substantially limits a major life activity (DuPaul & Stoner, 1994, p. 90)." Certainly, academic performance and school functioning can be considered a "major life activity." The majority of children with ADHD are not eligible for special services under the Individuals with Disabilities Education Act, (Goldstein & Goldstein, 1998). Although, these students could still be considered in need of an individualized intervention on the basis of being handicapped in accordance with Section 504.

A 504 plan can be individually designed to include accommodations within the regular classroom. The plan is typically in writing, describes the disabilities, and states the accommodations and related services to be provided, how, and by whom. When the school team considers all relevant information, including comprehensive assessments

with the parents' input as well as the input of the practitioner, they may then devise a series of accommodations that might be suggested on the written plan for student with ADHD students. Goldstein & Goldstein (1998) suggested a few accommodations that should be made for ADHD students when writing a 504 accommodation plan and they include:

- Modified assignments.
- Breaking tasks into shorter chunks or segments.
- Assistance from professionals in the school who are familiar with ADHD.
- Consultation with classroom teachers by such professionals.
- A reduction of written or copying task.
- Alternative testing measures or methods, including oral testing and the opportunity to take tests in secluded settings.
- The use of compensatory tools in the classroom (e.g., calculators, computers).
- An outline of the class discussion.
- Supplementing verbal instructions with visual information.

After the team determines which accommodations can be helpful to the student, every teacher receives a copy of the 504 accommodation plan and one remains in the student's file. The team schedules periodic meetings and a designated date scheduled to determine accountability. The purpose of these meetings is to assess whether the accommodations made a difference and are still necessary.

Medication

Central nervous system (CNS) stimulant medications are the most commonly prescribed medications for children with ADHD (Rief, 1993). Stimulant medication does not treat the ADHD symptoms; it allows the individual to have the necessary awareness to use the coping mechanisms to address the symptoms (Fisher & Beckley, 1999).

The term "CNS stimulants" refers to the ability of these medications to raise the level of activity, arousal, or alertness of the central nervous system. These drugs are structurally similar to brain catecholamines (i.e., dopamine and norepinephrine) and are called sympathomimetic compounds because they may mimic the actions of these brain neurotransmitters (Barkley, 1998).

The three most well known stimulant medications used to treat ADHD are Ritalin (methylphenidate), Dexedrine (dextroamphetamine), and Cylert (pemoline). Of the three medications, Ritalin is by far the most commonly prescribed and used medication (Copeland & Love, 1995). It is estimated that 1.5 million children are taking some sort of stimulant medication, and it is anticipated that over 70% of ADHD children taking the medication show improvement (Parker, 1998), increasing their attention and social interactions, academic performance, and their disruptive and impulsive behavior reduces (Goldstein and Goldstein, 1998).

The dramatic effects of stimulant medication on children with ADHD are both immediate and obvious. Often within the first hour after the medication is taken an observable change in handwriting, talking, attending to subject area, and social skills improve. In general, the children show less disruptive behavior. Classroom teachers are likely to notice improvement in homework and class assignments once medication is

prescribed. Parents will frequently report a marked reduction in troublesome sibling interactions, inappropriate activity, and non-compliance (Goldstein & Goldstein, 1998). Peers should also notice the ADHD child to be calmer, more organized, and more cooperative after the ADHD child takes medication. Since Ritalin is the most commonly used stimulant medication the researcher chose to focus on this medication and discuss why it is used by 70% of children, long-term side effects, and short-term side effects.

Ritalin is often the first choice of many physicians because there is strong documentation is the research (Barkley, 1998), and it has been shown to be effective across a wide age range. Ritalin comes in a standard (short-acting tablet 5mg, 10mg, or 20mg, which last three to five hours, given twice a day) and sustained release (SR-20mg, which is a long-acting, lasting seven to 10 hours a day) form (Copeland & Love, 1995). To determine the right amount of dosage per child, since all children need to be monitored individually, communication and collaboration is key. Parents and teachers will need to collaboratively consult with physicians regarding children with ADHD's medication (Nahmias, 1995), for the best dosage amount and times to be administered. The feedback may take the form of written note reports, behavioral and academic records, or a meeting. Communication regarding the student and possible side effects, behavior and academic performance is important for accurate dosage and timing of medication.

To determine whether or not a child's dosage of Ritalin is in the low, medium, or high range as compared to body weight, Parker (1988) recommends using the chart below.

Standard Ritalin Dosage Chart

Child's Weight	Low Dosage	Medium Dosage	High Dosage
22lbs.	3mg	6mg	10mg
33lbs.	5mg	9mg	15mg
44lbs.	6mg	12mg	20mg
55lbs.	8mg	15mg	25mg
66lbs	9mg	18mg	30mg
88lbs.	12mg	24mg	40mg

The general concept is to use Ritalin when you need to focus, maintain sustained attention to task, and control symptoms of distractibility, information-processing deficits, and slow speed thinking (Fisher & Beckley, 1999) and that is why 70% of children use the stimulant Ritalin. ADHD children who use Ritalin show a 25% to 40% increase in their cognitive skills, and academic skills (Parker, 1998), and their social interactions also significantly improve with peers, parents, and teachers. However, despite the positive effects of Ritalin there are short-term and long-tem side effects when taking Ritalin.

Short-term side effects while taking Ritalin include decreased appetite, insomnia, anxiety, irritability and mood swings when the medication wears off, headaches, weight loss, sleepiness, tics (will diminish with a lower dosage), and increased hyperactivity (Beal, 1998). Only in a minority of children (5 percent) do side effects such as these occur, and they tend to be minor and temporary (Friedman & Doyal, 1987).

Potential long-term effects of stimulant medications over several years have not been extensively studied and therefore no significant disadvantages associated with long-

term stimulant medication have been proven (Barkley, 1998). Some long-term concerns that parents have with their children using the medication are becoming drug dependent and abusive, height suppression, depression and the development of the cardiovascular system in children (Barkley, 1998). Whether it is long-term or short-term side effects, it is apparent that the frequency and severity of side effects should be assessed during non-medication or pretreatment conditions to establish whether they are truly associated with drug intake (DuPaul & Stoner, 1994).

Most of the time people take medication to treat a condition, but with ADHD there is no cure. Medication can only alleviate the core symptoms (Beal, 1998). Again, stimulant medication alone is not a sufficient treatment. In order for ADHD children to be successful and learn in their best possible school environment a multimodal treatment approach is the most effective.

Behavior Therapy

In order to get the full benefits of a multimodal treatment plan, people with ADHD usually use medication and behavior management together. Research shows it has been the most effective combination. Behavior modification helps the ADHD child replace their negative behaviors and attitudes that have built up over the years with positive ones (Beal, 1998). Effective behavior management approaches used in the classroom can assist teachers in selectively reinforcing students' impulse control, self-discipline, and organizational skills through the use of both positive reinforcement for approved behavior and negative consequences for inappropriate behavior (Copeland & Love, 1995). Behavior management can be useful in helping parents, educators, and ADHD children in society and what expectations the society has of them.

Dealing with students who display problem behavior is one of the most frequent concerns of teachers (Rathvon, 1999). Inappropriate or disruptive behaviors such as getting out of their seat, talking out of turn, and failing to comply with teachers and their directions not only interfere with the ability of the misbehaving student to benefit from instruction, but it also interferes with the teacher's ability to maintain a productive orderly environment, in which ADHD children need—structure.

Attitude and behavior changes, especially major ones, will not just happen on their own. They must be guided into a person's daily life through the use of behavior modification or behavior therapy. Behavior therapy approaches to classroom management usually involve a joint effort between the child's home and school in which several behaviors are targeted for monitoring and change (Parker, 1988).

Effective behavior management programs directly target the areas in which change is desired. Barkley (1998) developed a "General Behavioral Guidelines" for selecting targeted behaviors in ADHD children. Targeted behaviors should do the following:

- Focus on teaching children a set of skills and adaptive behaviors to replace the problems.
- Include academic performance (e.g., amount of work completed accurately) rather than just on-task behavior because improvement in classroom deportment is often not paralleled by improvement in academic functioning.
- Include common problem situations such as transitions between classes and activities, recess, and lunch.

- Carefully define the behavior in question so that the teacher is able to reliably monitor the behavior.
- Identify antecedents and consequences to the behavior in the natural environment through interviews with teachers, parents, and students, and direct observations.
- Generating hypotheses about the function of the problem behavior in terms of antecedent events that set the occasions for the behavior and/or consequences that maintain it.
- Systematically manipulate antecedents and consequences (those that can be) to test hypothesis about their functional relationship to the targeted behavior.
- Implement interventions that alter the functional antecedents or consequences so that problem behavior is replaced with appropriate behavior.

These assessments provide a useful mechanism for tailoring interventions to any individual child, not just children with ADHD (Barkley, 1998).

Before discussing specific behavior management strategies for ADHD children, there are a number of general principles that apply to classroom management, and management at home that are critical to the success of behavior therapy (Fisher & Beckley, 1999). Fisher & Beckley (1999), along with Barkley (1998) recommend these guidelines to be followed in order to have an effective program:

1. Rules and instructions provided to ADHD children must be clear, brief, and often delivered through more visible and external modes of presentation than is required for the management of normal children.
2. Reward "good" behavior as soon as possible and deliver them frequently.
3. Types of consequences used with ADHD children must often be of a higher magnitude, or more powerful, than these needed to manage the behavior of normal children.
4. An appropriate and often richer degree of incentives or motivational parameters must be provided within a setting or task to reinforce appropriate behavior before punishment can be implemented.
5. Rewards that are employed must be changed or rotated frequently with ADHD children.
6. Anticipation is the key wit ADHD children. This means that teachers and parents must be more mindful of planning ahead in managing ADHD children.
7. Pick punishments that will fulfill some type of task or job that needs to be done around the home so the child can be given credit for task completion.

By using and keeping in mind the "target behavior guidelines" and the "general rules for an effective program" discussed previously the writer of this paper can now discuss some of the types of interventions and programs that are used for behavior modification such as token economy systems, behavioral contracting, time outs, and home-based contingencies.

The token economy program is a form of a reward system. For students with ADHD, consistent, frequent, and significant rewards are often necessary to provide them with optimal feedback and reinforcement for learning and behavioral development (Nahmias, 1995). Token economy systems are a form of behavioral contracting, which uses tokens as an immediate reward for certain behaviors or task performance. Tokens generally have no intrinsic value other than their worth when exchanged for valued objects, activities or privileges. Behavior management systems, such as a token economy, incorporating these components has been shown to be highly successful in enhancing the academic productivity and appropriate behavior of inattentive children (DuPaul & Stoner, 1994).

Designing a school and home-based token reinforcement system involves numerous steps in order to be successful with an ADHD child. Parker (1998) described nine simple steps that a parent or educator should follow. They include:

1. Explain the concept of a token economy system to the student.
2. Select an appropriate token that cannot be reproduced by the student (poker chips, fake money, stamps).
3. Discuss with the student the specific goals that you had in mind for the child to reach.
4. Assign a token value for each behavior.
5. Fines should be a part of the token system as well. Select one negative behavior, which is particularly problematic, and remove tokens when that behavior is displayed.

6. Determine rewards for which the tokens can be exchanged. Large variety of rewards should be listed so to encourage student motivation.
7. Decide when tokens will be given and when they might be exchanged for rewards.
8. Construct a daily or weekly chart on which the target behaviors will be listed along with their respective toke value.
9. Using a daily or weekly chart, discuss with the student his performance on a daily basis.

Token systems are generally much more effective with ADHD students than simply providing social praise or positive attention for appropriate performance. Behavioral interventions that can offer a tangible reward or the promise of one, through actual tokens or points, are usually very effective with ADHD students (Barkley, 1998). Once successful completion of the entire token assignment, the parent or educator should eventually develop a behavior contract to take the token economy into a deeper level.

A behavioral contract is an agreement drawn up between two or more parties, in this case a teacher, a parent, and an ADHD child, in which the student agrees to behave in a specified reciprocal behavior for the teacher or parent (Parker, 1998). The effectiveness of a contract with ADHD children may be short-lived and the reward system will need to be revamped frequently (Rief, 1993), but always remain consistent and do not give up when you feel it is not benefiting you as the teacher or parent.

The behavior contract should include the desired classroom behaviors and consequences available contingent upon their performance (DuPaul & Stoner, 1994). The purpose of the contract is to restructure the environment to provide a consistent set of

expectations and consequences to the student, based upon certain pre-defined performance criteria (Parker, 1998). The main difference between the token economy and the behavior contract is delay of time between the behavior completion and reinforcement. The token economy program provides an immediate reinforcement, unlike the behavior contract. DuPaul & Stoner (1994) provided one example of a behavior chart, which educators could use as a model. Example:

I, _____, agree to do the following:

1. Complete all of my written math and language arts assignments, with at least 80% accuracy, before lunchtime.
2. Give [insert teacher's name] my full attention when he or she is speaking to the class or to my reading group.
3. Remain quiet, and follow directions when lining up for recess, lunch, and music class.
4. Follow all playground rules during recess.

Each day that I do these things, I will be allowed to choose one of the following:

1. 15 minutes' time at the end of the school day to play a game with a classmate.
2. Use the classroom computer for work or play for 15 minutes.
3. Assist my teacher by completing some errands (take attendance forms to office) or in class jobs (collect assignments).

If I have a successful week, I will have earned one of the special weekend activities with my parents, such as a bike ride, trip to the park, or having a friend visit for lunch or dinner. If I do not complete these classroom responsibilities, then I will lose the opportunity to participate in daily free time activities.

I agree to fulfill this contract to the best of my abilities.

Signed,

_____ _____

Student's signature Teacher's signature

Date_____

Although behavioral contracting is a relatively straightforward procedure, a number of factors may directly influence it usefulness with the ADHD population. Some factors that might affect the contract are age (works best for children above the age of six), and the length of time delay between the required behavior and reinforcement, which is a crucial issue when implementing behavior management programs with ADHD children (DuPaul & Stoner, 1994).

Time out is another form of behavior management. Time outs or time aways for ADHD students are necessary in most cases. These children often cannot handle all of the stimulation in a classroom and become worked up and sometimes out of control (Rief, 1993). Time away from the group is often needed to calm ADHD children down and help them regain self-control away from the distraction.

Time out has been extensively researched and found to be effective in a variety of educational and treatment situations (Goldstein & Goldstein, 1998). However, time outs can be difficult to implement in an educational environment where they may be up to thirty other children in the classroom. When placing an ADHD child in a time out make sure it is short (one to ten minutes) and try to do it as calmly and positively as possible so you are not drawing the rest of the children's attention in the classroom.

To make time out or time aways to run smoothly in your classroom partner up with another teacher (Rief, 1993), where you can send the child to work on an independent assignment, have a "time out chair" in the classroom away from all distractions, or you may want to talk to your guidance counselor and see if you can send the child there if they continue to be disruptive when they been warned to stop a few times.

Educators need to caution against when time outs may not be effective. An example when a time out is not effective is when inappropriate behavior is due to a desire to avoid work or be alone, because in those cases it may be a reinforcer instead. Overall, time out appears to be an effective procedure for reducing aggression and disruptive actions in the classroom, especially when they are maintained by peer or teacher attention (Barkley, 1998).

The last behavior modification program to be discussed is home and school-based contingencies. Home and school-based contingency programs involve the collaboration between school and home in the assessment of student behavior by the teacher, and the administrator of rewards and consequences at home, based upon the teacher's assessment (Parker, 1998). Home and school-based contingency programs are effective supplements to classroom behavioral system such as a classroom token economy program or behavior contracts (Parker, 1988).

Home-based contingencies have several beneficial features. They include direct feedback to parents on the child's performance in several areas of classroom functioning; parents receive daily information regarding their child's behavior during school; and the type of quality of reinforcers that can be provided in the home are typically far more extensive than the quality of reinforcers that can be provided by the school (Barkley, 1998).

The so called "report card" that goes home to the parents every night should include several behavioral goals such as: paying attention to class activities, completion of assigned work, accuracy of work, and ability to follow rules (DuPaul & Stoner, 1994). For the "report card" to work effectively there needs to be collaboration between the

parents and teachers in order to identify the target behaviors that they would like the child to work on. The specific goals should vary with respect to the presenting problems of the individual ADHD student. The following figure by Barkley (1998) illustrates a home-based reward "report card" program that relies on daily school behavior ratings.

Name: _____Date: _____

Please rate child in areas below according to this scale:
2 = Very good
1 = OK
0 = Needs improvement

CLASS PERIOD/SUBJECT

TARGET BEHAVIOR	1	2	3	4	5	6
Participation						
Class work						
Handed in homework						
Interaction with peers						
Teacher's initials						

Total points earned:
Homework for tonight:
Comments:
Parent's initials:

When the child gets home and gives the parent the behavior "report card" the parent can then award the child points for each rating on the card (i.e., 0=no points, 1=one point, 2=two points). The child may then spend these points on activities from a home-reward menu.

While home and school-based contingency programs are effective for many ADHD students, there are some problems, which can develop when they are implemented. These problems may include students being irresponsible in bringing the card home or returning to the teacher; parental compliance in reviewing the daily card; and the delivery of contingencies to the ADHD child is generally out of the teacher's

control; and lastly, some ADHD students have problems being gratified later at home and not immediately during school (Parker, 1998).

In conclusion, think of behavior modification as "self-training." It helps a person with ADHD "do the right thing" in everyday situations and in situations that are new to them (Beal, 1998).

Classroom Management

The importance of helping teachers create an environment that fosters active academic responding and decreases disruptive behavior is significantly important when ADHD children are in the classroom (Rathvon, 1999). These children are in particular need of a classroom that is structured. They need to feel secure within the parameters of their classroom, knowing precisely what is expected of them academically and behaviorally (Rief, 1993).

The classroom should be well organized, structured, and predictable, with the posting of a daily schedule and classroom rules. One of the most important goals in classroom management is to educate the students about the rules and expectations in the classroom. The rules need to be short, precise, and clearly stated. The ADHD child does not respond well to multiple instructions (Goldstein & Goldstein, 1998). Compliance in the classroom increases when the ADHD child is required to repeat the rules and directions, this will show the teacher that the child is aware of the rules and directions. After the classroom rules have been determined the teacher should visually post the rules in the room on a brightly colored poster to reduce the need for frequent verbal repetition of rules (Barkley, 1998).

The next important role the teacher can take in managing her classroom to benefit ADHD children is to be aware of the environment. Some helpful hints the educator can follow include seating the ADHD child near the teacher's desk, yet in front of the row, surrounding the ADHD child with "good role models" (Copeland & Love, 1995), avoiding distracting stimuli (windows, doors, heater), and avoiding frequently changing the schedule.

Another important aspect to be aware of when dealing with ADHD children in the classroom is the altering of assignments. Academic assignments should be brief (i.e., accommodating the child's attention span) and presented one at a time rather than all at once in a packet or group (Barkley, 1998). Short time limits for task completion should also be specified and feedback regarding accuracy of assignments should be immediate. If a child does need extra time, give them extra time without being penalized.

The article ADHD: A guide for teachers, supplied by a professor from UW-Stout (2000) provides recommendations for giving instruction to students such as: maintain eye contact, make directions clear and concise, simplify directions, repeat directions, and require a daily assignment notebook if necessary. If using a notebook, make sure the student correctly writes down all assignments, parents and teachers sign the notebook, and parents and teachers use the notebook as a communication tool. In order for a child to become successful as a student on their own, self-management (social skills) interventions should be taught to the child as well so they can remain organized as a student and learn social skills to be a good friend too.

Social Skills and Self-Management

One of the primary goals of treatment for ADHD is to enable a student to develop adequate levels of self-control (DuPaul & Stoner, 1994). According to Shapiro & Cole (1994) self-management "generally refers to actions designed to change or maintain one's own behavior. Self-management interventions in the classroom involve teaching a child to engage in some behaviors in effort to change a target behavior (p. 6)." Many ADHD children display poor social skills and impaired social judgments and with self-management interventions an ADHD individual will improve their social skills. It is difficult for ADHD children to accurately perceive and recognize other persons' potential responses or reactions in social situations and they often lack sufficient empathy to judge the potential impact of their behaviors in social situations (Everett & Everett, 1999). There are three self-management techniques an ADHD child can use to help improve his behavior and social skills; self-monitoring, self-reinforcement, and self-instruction.

Self-monitoring is a method of teaching students self-control over their own behavior (Parker, 1998). Self-monitoring is a technique used by the student to observe and record his/her own behavior and in doing this the child usually achieves better self-control of themselves in school and in social interactions.

There are many ways a child can monitor their own behavior such as performing a routine in which the child will stop what they are doing, evaluate their behavior (on a chart), and record whether a specific target behavior has occurred (DuPaul & Eckert, 1997). When a child is using self-monitoring it serves to prompt the student to evaluate whether they were performing the target behavior, for instance, paying attention to their work, and to self-record their performance on a chart. Despite the insightful rationale

behind this approach, the results of empirical studies on self-monitoring have been quiet disappointing. DuPaul & Eckert (1997) found that the self-monitoring strategy is associated with minimal behavioral change in most studies. The effects of contingency-based, self-monitoring strategies have been more positive (Hinshaw, Henker, & Whalen, 1984); however, few studies have demonstrated that such strategies lead to maintenance and generalization of behavioral and social change.

The most promising self-management intervention for ADHD requires students to not only monitor their behavior but also to evaluate and reinforce their own performance (DuPaul & Stoner, 1994). Self-reinforcement strategies may be particularly helpful for addressing ADHD-related problems at the secondary level where teachers and students are reluctant to employ behavioral management procedures. Thus, self-reinforcement may be a more acceptable intervention at the secondary level and therefore will be likely to be implemented on a consistent basis (DuPaul & Stoner, 1994).

The third self-monitoring tool that is often used by ADHD students is self-instruction. According to Shapiro & Cole (1994) self-instruction is "the internalization of self-statements that reflect deficient or maladaptive behaviors. Self-instruction involves teaching children specific verbalizations to direct their own behavior (p. 9)." In other words, it teaches them to talk to themselves. Self-instruction can be used to increase academic behaviors such as on-task and independent work performance, academic performance, and to decrease disruptive behaviors (Shapiro & Cole, 1994).

Although self-instruction programming has a great deal of intuitive appeal in fostering self-control, there is some question as to its efficacy when used in isolation (Abikoff, 1985). Self-instruction does have two limitations that DuPaul & Stoner (1994)

mentioned. They are a lack of generalization of success from the training setting to the class or home setting, and there are some questions on the components of the treatment such as is the training in self-instruction effective when used alone, beyond what would be obtained by using reinforcement procedures? It is apparent that researchers should address these two issues before widespread adoption of self-instruction in the treatment of ADHD can be advocated (DuPaul & Stoner, 1994).

A few examples self-management can be used to help an ADHD child are to complete their homework, to stop excessive calling out during classroom discussions, and perhaps stop frequent use of abusive language. The key difference from behavioral management approaches, of course, is that the student is responsible for the implementation of the recording, evaluating, and rewarding (Shapiro & Cole, 1994). The shift from control by others to self-control is a critical and essential component of effective and lasting social and behavior change.

Family Therapy

Children with ADHD initiate a dysfunctional system of interactions with their families. Having a child with ADHD in the family predisposes all members toward a higher degree of conflict than is found in families without a child who has ADHD (Erk, 1997). To cure the isolation of the ADHD child from family members, the family must work together to cope with the disorder ADHD, and it needs to be viewed as a characteristic of the family, not the specific member (Fisher & Beckley, 1999).

The greatest potential for therapeutic change regarding the family's perceptions of, and reactions to, the child's ADHD symptoms lies in family therapy (Everett &

Everett, 1999). Family therapy sessions are scheduled with numerous people that include the parents, the ADHD child, the siblings, and any caretakers or live-in relatives.

Little has been written on family therapy for children who have ADHD and their families (Erk, 1995). It is believed that family therapy or counseling is an essential approach in the treatment of the child with ADHD, especially for the family of a child with a longstanding undiagnosed attention disorder (Erk, 1997). Initiating family therapy can be effective if there is a careful initial assessment of the problem, positive attitudes from family members, good therapeutic rapport, and flexibility, as well as the therapist having warmth, empathy, and the ability to deal with family resistance to change (Goldstein & Goldstein, 1998). The main component of family therapy is parent training and counseling, where the parent is better able to cope and understand the ADHD child's behavior and what they are feeling.

Parent training can be effective in reducing activity level, conflict, and anger intensity and in increasing on-task behavior and compliance of children with ADHD (Erk, 1997). Erk (1997) believes that the main therapeutic objective for children with ADHD, and their parents, is to learn methods or techniques (in eight to twelve sessions) of coping and compensating for this ongoing learning and behavioral disability. For parents to better cope and learn about the ADHD disorder Erk (1997) recommends that the sessions include the following: (a) program orientation, (b) understanding parent-child relationship and principles of behavior management, (c) enhancing parental attending skills, (d) paying positive attention to appropriate independent play and compliance, (e) establishing a home token system, (f) using time out to handle noncompliance, (g) extending time out to other misbehaviors, (h) managing children's

behavior in public places, (i) handling future behavior problems, and (j) a booster session that may later summarize the content or refine the procedures. The sessions include making parents aware and teaching them the interventions that work effectively with ADHD children. Parents need to be guided on how to implement the intervention techniques in their home so that they are successful.

The specific goals of family therapy sessions vary according to the dynamics of each family system and the age of the ADHD child. However, there are several central goals provided by Everett & Everett (1999) that appear to be common with most ADHD families:

1. Block and extinguish the patterns of scapegoating.
2. Reinforce and empower the parents' newly defined roles in the family.
3. Define and strengthen the parents' boundaries.
4. Stabilize and enhance the marital relationship.
5. Define and adjust intergenerational boundaries, if necessary,

The limitation for the family therapy intervention is the expense of the therapy and locating programs in expensive clinic or hospital settings restricts availability of parent training (Barkley, 1998). In addition to increasing the cost of family therapy, the waiting lists and assessment requirements encountered in clinic-based programs may delay access and reduce readiness for participation (Barkley, 1998). Also, factors such as socioeconomic status and family support can positively or negatively influence the outcome of family therapy for ADHD children and that needs to be considered (Erk, 1997).

Children Books

The use of Children's books as interventions is a relatively new type of approach. While many interventions are used to fix the primary characteristics of ADHD such as hyperactivity, impulsivity, and distractibility, children's books are used to help the secondary characteristics. Secondary characteristics are problems that some ADHD individuals frequently encounter, such as problems with learning, self-esteem, and interpersonal relationships (Fouse & Morrison, 1997).

Young children with ADHD wonder why school is so hard for them when it appears so easy for their classmates. Classmates do not understand why teachers and others make modifications and adaptations for students with ADHD. Due to this misunderstanding, between ADHD children and their peers' rejection may occur.

The use of children's books may enable ADHD students to develop a clearer understanding of themselves and their problems. Mercer & Mercer (1989, p. 169) stated that "children's literature illustrates that some of their favorite characters, if their lives had been real, would be suffering the same growing pains that the child with ADHD is experiencing." These books can be read aloud to children by parents, teachers, and counselors and can provide the opportunity to discuss personal problems and concerns that ADHD children or their classmates may have. Fouse & Morrison (1997) listed some issues that can be addressed which include how children with ADHD differ from and are similar to others, how to handle criticism, how to develop an understanding of their strengths and weaknesses, and how to develop study skills and learning strategies that will provide academic and social-emotional growth.

Parents and educators should not expect immediate results from reading and discussing just one book. Numerous books need to be read and discussions to be held with the entire classroom (Fouse & Morrison, 1997). The more children read and internalize ideas from books, the more likely it is that there will be a positive impact on the children's attitudes and behaviors.

A few of the books, of the many, that parents, teachers, and counselors can use to help children with ADHD and their peers to have a better understanding are: *Eekee the Jumpy, Jumpy Elephant (ages 3-8)*, by: Korman C., & Trevino, E.; *Shelly, the Hyperactive Turtle (ages 4-7)*, by: Moss, D.; *Eagle Eyes (ages 6-10),* by: Gehret, J.; *Learning to Slow Down and Pay Attention (ages 6-14),* by: Nadeau, K.; and *I Would if I Could: A Teenagers Guide to ADHD/Hyperactivity (ages 12-18),* by: Gordon, M.

Controversial Treatments/Interventions

There are a number of controversial methods that have been proposed and are actively marketed for the treatment of children with ADHD (Goldstein & Goldstein, 1998). These treatments have not yet met scientific standards of effectiveness. Some of these approaches deserve more research, and others do not. Practitioners need to be informed about these treatments to help parents make wise decisions concerning the treatment of their children with ADHD.

Diets are an intervention that contains controversy. In research, there is failure to support a specific link between symptoms of ADHD and a particular diet, however, it has been found that ADHD individuals who suffer from allergies will benefit from a specific diet (Fisher & Beckley, 1999). According to Fisher & Beckley (1999, p. 314) "any diet, any program, will offer more attention to the ADHD child, and ADHD is a disorder of

inattention. Therefore, attention that provides increased structure, more one-on-one time and more monitoring will automatically show improvement in the behavior of the ADHD child."

When dealing with the controversial treatment of megavitamins and mineral supplements, research has not proven that the use of vitamins will significantly alter the learning patterns of the ADHD child (Fisher & Beckley, 1999). Vitamins are identical with health and have intuitive appeal for treating children's problems (Goldstein & Goldstein, 1998). Vitamins are considered "natural" supplements, giving them an appearance of safety that is reassuring to parents.

If anything, these nutritional supplements do provide some relief for distractibility because they appear to exert some calming effect on the individual. Megavitamins and mineral supplements can provide the ability to flush the stored environmental and metabolic toxins out of the body, to neutralize free radicals with the blood stream (Fisher & Beckley, 1999).

The last controversial treatment to be discussed is massage. The use of massage therapy has been suggested as an addition to medication for treatment of ADHD children. Massage has been found to decrease some of the side effects of medication, specifically headaches and sleep disturbances (Fisher & Beckley, 1999). Children are taught themselves to address their symptoms of distractibility. With the exception of any trauma incurred with regard to the massage process for children, externally, it would appear that teaching the child to soothe themselves with massage could be a useful attempt (Fise & Beckley, 1999).

In 1993, Ingersoll and Goldstein, based upon an extensive review of the available literature on controversial treatments for ADHD, concluded that the marketplace was taking advantage of many parents "desperate to help their children but confused about the nature of the problem and the kinds of treatment most likely to help (p. 210)." Practitioners must be knowledgeable about the controversial treatments and willing to ethically accept their responsibility to communicate such knowledge to their parents and families (Goldstein & Goldstein, 1998).

Community Support Groups and the ADHD Child

Families and teachers often need help learning how to cope and deal with a "difficult" or "challenging" ADHD child (Rief, 1993). Parents need to hear that they are not alone and that many other parents are struggling with the same worries, fears, and frustrations. Support groups are extremely helpful for this purpose. Networking with other people who share similar experiences and bringing in speakers and resources is very effective. Parents need to learn about their child's problems and how to help at home, as well as how to be their child's advocate and communicate their child's needs to family members, peers, and teachers. There are three main national support groups which include CH.A.D.D., ADDA, and LDAA.

CH.A.D.D., Children with Attention Deficit Disorders, is a national support group for parents of ADD children and for educators and health care professionals who have an interest in ADD children. With nearly 300 chapters nationally, and international affiliates in progress, CH.A.D.D. provides information and services to thousands of members throughout the United States. CH.A.D.D. members receive monthly newsletters, called the "Chadderbox" on ADD which contain valuable tips for raising and teaching ADD

children, ADD fact sheets, and a guide for educators. Conferences held annually attract ADD researchers, educators, clinicians, and parents who can offer practical information to other parents and professionals. For more information about CH.A.D.D. and to locate the CH.A.D.D. chapter nearest you, contact:

CH.A.D.D.
National Headquarters
499 Northwest 70th Avenue, Suite 101
Plantation, FL 33317
(954) 587-3700 * (800) 233-4050
Internet: www.chadd.org

ADDA, the Attention Deficit Disorder Association, is a national organization, which has been active in addressing the needs of adults with ADD. Through its annual conference on adult issues, ADDA has succeeded in bringing important information to the forefront. For more information about ADDA, contact:

Attention Deficit Disorder Association
P.O. Box 972
Mentor, OH 44061
(800) 487-2282

LDAA, the Learning Disabilities Association of America, is a national support group for parents of children with learning disabilities. LDAA is well known for the support and information it provides to parents of learning disabled children. For more information about LDA, contact:

Learning Disabilities Association of America
4156 Library Road
Pittsburgh, PA 15234
(412) 341-1515

There are many local organizations or support groups that can be found at your local school district, hospital, and family centers. Concerned people may contact a school counselor or practitioner for further assistance or look in the yellow pages.

Summary

There is a generous amount of literature regarding attention deficit-hyperactivity disorders and the interventions that are available to educators and parents. Through the extensive review of literature the research can draw the implication that once ADHD is identified in a child the most beneficial treatment that can be provided to them is a multi-modal approach. Best results are obtained when behavioral management, classroom management, family therapy, and medication, when needed, are used together to help the ADHD child.

CHAPTER III

Summary, Conclusion, and Recommendations

Summary

With 3% to 5% of children in the United States being diagnosed with ADHD and increasingly on the rise, the purpose of this paper was to do a comprehensive review of the literature, and draw sets of implications from literature on the subject of multimodal intervention approaches and common strategies for parents and educators to use for students who have attention deficit-hyperactivity disorder. While doing the research the writer reviewed the current state of single and combined treatments for the ADHD child. Practitioners, teachers, and parents are becoming increasingly aware that the multiproblems (impulsive, inattentive, hyperactive, school failure), and multiskill deficits that children with ADHD experience require a well-organized treatment plan.

A plan for an ADHD child must include treatments with demonstrated success, including medications, parent training, parent and teacher behavior management training, self-management training, and academic support. Most importantly, for an ADHD child to perform at an optimal level, collaboration and consultation should be conducted on a regular basis between practitioners, educators, school nurses, parents, and the ADHD child.

Research continues to show that there are many benefits of a multimodal treatment plan, rather than using just one single treatment approach. Stimulant medication has been shown to consistently contribute to the most improvement, improving a wide range of ADHD symptoms in 70% to 75% of ADHD children.

Research has demonstrated that providing an appropriate combination of treatments as needed for individual children results in improved functioning over a short period.

By using a multimodal treatment plan you are not only improving the ADHD symptoms, but also classroom behavior, self-esteem, family and peer relations, and academic success. Each ADHD child is an unique individual, therefore consultation among physicians, educators, parents, and the child need to be done to develop the child's own unique multimodal treatment plan.

Conclusions

The manner in which children with ADHD attempt to gain and maintain control over their lives, unfortunately, is impulsive and disinhibitive. This results in less control and coercively contributes to an increasing pattern of helplessness and for some a subsequent profile of maladaptive efforts to gain and maintain control. Thus, it can be concluded that a central goal for educators in their work with ADHD youth is to help them develop skills to exert and maintain appropriate control over themselves, their lives, and their environment.

It can be concluded that families faced with raising a child with ADHD require comprehensive, intensive, and flexible support throughout the years of raising their children. Parents must be counseled to understand how to manage their ADHD child's behavior at home and how to punish and reward the child. It can be concluded that this requires accurate knowledge of the disorder and its complications. The parents must be consistent, predictable, and supportive of their ADHD child's daily interactions.

ADHD children need consistency, predictability, and a positive and supportive environment to be successful at school and home. Through analysis of research the

writer can conclude that teachers can provide ADHD children with this if they alter assignments, maintain good classroom management, use a token economy, and maintain good communication between the child's parents and physicians.

Through research it has also been shown that the characteristics of ADHD can interfere with the ADHD child's ability to make and keep friends. It can be concluded that their peer group actively rejects children with ADHD and children who are both rejected and aggressive are at great risk for long-term social-behavioral problems.

Lastly, it can be concluded that for ADHD children to perform at their optimal level and to be successful, collaboration and consultation is a key component to their success. Collaboration and consultation should be done between the physicians, parents, school nurse, educators, and the ADHD child. During these consultation meetings the following may be discussed: medication; the child's behavior; other interventions that may be appropriate; and, overall how the child is doing and what can educators and parents do to better assist the child.

Recommendations

It is quite humbling to realize that although our understanding of ADHD has greatly advanced over the last several decades, children with this disorder continue to encounter significant difficulties in succeeding in schools. To correct this situation, advancements must be made by practitioners, parents, educators, and training institutions to better help ADHD children become successful in school and social interactions.

By doing a comprehensive review of literature, a set if recommendations have been made for practitioners, parents, educators, and training institutions to better assist the ADHD child.

1. First, practitioners in the fields of psychology and education must increase their awareness and understanding of the limitations of students with this disorder.
2. Professionals possessing expertise in working with such children must educate their colleagues to be similarly proficient. Children with this disorder are encountered in every type of school setting, therefore all educators should possess at least minimal competencies in identifying these children and designing effective education programming to meet their needs and help them to become successful, productive citizens.
3. It is important for the practitioners to be available and supportive to the classroom teacher. Initially, the practitioners should try and educate teachers concerning basic background and developmental aspects of ADHD. The practitioner must understand each teacher's style and capability before recommending classroom interventions. The practitioner must be sensitive to the multiple daily demands placed on teachers and the increased pressure teachers experience when faced with educating one or more children with ADHD.
4. As with parents, the practitioner must be supportive and maintain good lines of communication dealing with the ADHD child.
5. Parents need to be counseled to understand that managing their ADHD child's behavior at home requires accurate knowledge of the disorder and its complications.
6. Parents must be consistent, predictable, and supportive of their child in their daily interactions.

7. There needs to be more support groups provided to parents who have children with ADHD. This would help increase parental competence, which would help parents understand and accept the primary cause of ADHD child's behavior. The support group would help parents, educators, and maybe even other family members to see the world through the eyes of the ADHD child.
8. Parents need to be provided with more than some basic behavioral techniques if they desire long-lasting change. For example, parents must be helped to understand that punishment will be successful when it is chosen as the intervention for incompetent behavior.
9. Parents need to understand their child's temperament style. For example, easily over aroused parents must first be taught to master their own temperament before they can be taught strategies to master their children's temperament.
10. Educators need to be going to seminars on how to administer and monitor the dosage of medication. If all educators went to a seminar to gain information on the most accurate way to monitor and administer medication this would help benefit the child immensely. The educators would have accurate information for the child's physicians and parents and together they can collaborate to see if the medication is meeting the needs of the child.
11. The physician and training institutions must provide classroom teachers with a realistic overview of medications and the areas of problems that can be addressed through medication intervention.
12. Educators can also benefit the ADHD child by learning more about the disorder and what they can do to help the child.

13. Educators need to become more knowledgeable about ADHD by attending a seminar or signing up for a college course on classroom management, searching the Internet for more information, and asking professionals for help.
14. The educator should become familiar on how to develop behavior charts for the classroom and at home, modify classroom assignments, and understand when 504 accommodation plan would be beneficial for the ADHD child and how to develop one.
15. Training institutions should be providing information about ADHD to the soon to be educators. At the alarming prevalence rate on the rise, the training institutions need to keep up with these rates. They can start educating educators on classroom management, how to administer medication, how to monitor medication, what techniques work best when teaching an ADHD child, and most importantly educate on what ADHD is, the causes of ADHD, and some interventions that can be used to better assist the ADHD child.
16. Practitioners, parents, educators, and training institutions need to become more aware of the multimodal approach. This approach may be the most effective and best treatment plan for helping the ADHD child to perform at the optimal level at school and at home, and also being successful in peer relationships.

Bibliography

Abikoff, H. (1985). Efficacy of cognitive training intervention in hyperactive children: A critical review. *Clinical Psychology Review, 5,* 479-512.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (fourth edition). Washington, D.C.: American Psychiatric Association.

Aust, P. H. (1994). When the problem is not the problem: Understanding attention deficit disorder with and without hyperactivity. *Child Welfare, 73,* 215-228.

Baren, M. (1989). The case for Ritalin: A fresh look at the controversy. *Contemporary Pediatrics, 6,* 163-169.

Barkley, R. A. (1998). *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment* (second edition). New York: The Guilford Press.

Barkely, R. A. (1992). *ADHD: What do we know?* New York: The Guilford Publications, Inc.

Beal, E. (1998). *Everything you need to know about ADD/ADHD.* New York: The Rosen Publishing Group, Inc.

Buttross, S. (1998). Attention deficit disorder is being over-diagnosed. *Modern Medicine, 66,* 48-51.

Copeland, E. D., & Love, V. L. (1995). *Attention without tension: A teacher's handbook on attention disorders* (Rev. ed.). Plantation, Florida: Specialty Press, Inc.

Doyal, G. T., & Friedman, R. J. (1987*).* *Attention deficit disorder and hyperactivity* (Rev. ed.). Danville, Illinois: The Interstate Printers and Publishers, Inc.

DuPaul, G. J., & Eckert, T. L. (1997). The effects of school-based interventions for attention deficit hyperactivity disorder: A meta-analysis. *School Psychology Review, 26,* 5-28.

DuPaul, G. J., & Eckert, T. L. (1997). Interventions for students with attention-deficit/hyperactivity disorder: One size does not fit all. *School Psychology Review, 26,* 369-382.

DuPaul, G. J., & Stoner, G. (1994). *ADHD in the schools: Assessment and intervention strategies.* New York: The Guilford Press.

Erk, R. R. (1995). The conundrum of attention deficit disorder. *Journal of Mental Health and Counseling, 17,* 131-145.

Erk, R. R. (1997). Multidimensional treatment of attention deficit disorder: A family oriented approach. *Journal of Mental Health Counseling, 19,* 3-23.

Everett, C. A., & Everett, S. V. (1999). *Family therapy for ADHD: Treating children, adolescents, and adults.* New York: The Guilford Press.

Fisher, B. C., & Beckley, R. A. (1999). *Attention deficit disorders: Practical coping methods*. New York: CRC Press.

Fouse, B., & Morrison, J. A. (1997). Using children's books as an intervention for attention-deficit disorder. *Reading Teacher, 50,* 442-446.

Goldstein, S., & Goldstein, M. G. (1998). *Managing attention deficit hyperactivity disorder in children: A guide for practitioners.* Canada: John Wiley & Sons, Inc.

Hinshaw, S. P., Henker, B., & Whalen C. K. (1984). Cognitive-behavioral and pharmacologic interventions for hyperactive boys: Comparative and combined effects. *Journal of Consulting and Clinical Psychology, 52,* 739-749.

Ingersoll, B., & Goldstein, S. (1993). *Attention deficit disorder and learning disabilities: Realities, myths and controversial treatments.* New York: Wiley.

Mercer, C. D., & Mercer, A. R. (1989). *Teaching students with learning problems.* New York: Merill.

Nahmias, M. L. (1995). Communications and collaboration between home and school for students with ADD. *Intervention in School and Clinic, 30,* 241-248.

Parker, H. C. (1998). *The ADD hyperactivity handbook for schools: Effective strategies for identifying and teaching students with attention deficit disorders in elementary and secondary schools.* Plantation, Florida: The Specialty Press, Inc.

Parker, H. C. (1988). *The ADD hyperactivity workbook for parents, teachers, and kids.* Plantations, Florida: Impact Publications, Inc.

Rathvon, N. (1999). *Effective school interventions: Strategies for enhancing academic achievement and social competence*. New York: The Guilford Press.

Rief, S. A. (1993). *How to reach ADD/ADHD children: Practical techniques, strategies, and interventions for helping children with attention problems and hyperactivity*. New York: The Center For Applied Research In Education.

Shapiro, E. S., & Cole, C. L. (1994). *Behavior change in the classroom: Self-management interventions*. New York: The Guilford Press.