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Attention deficit disorder in children and adolescents

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Attention deficit disorder in children and adolescents

Abstract

Attention Deficit Disorder (ADD) is now being diagnosed in many of our regular classroom settings. ADD has many symptoms that accompany the disorder. Two of these symptoms are: inappropriate levels of sustained attention and impulse control and poor regulation of activity level to situational demands (American Psychiatric Association, 1987). It is believed that this disorder begins in early childhood and can continue on, throughout childhood and adolescence. According to Barkley, Fischer, Newby, & Breen (1988), the mean age of onset is 4 years. More males than females have been found to evidence this disorder with the incidence ranging from 3:1 to 9:1 in favor of males (Barkley, 1981). Children and adolescents who experience this disorder are unable to concentrate on a given task.

ATTENTION DEFICIT DISORDER
IN
CHILDREN AND ADOLESCENTS

A Research Paper

Submitted to

The Department of Curriculum and Instruction

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Cheryl L. Harris

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CHAPTER I

INTRODUCTION

Attention Deficit Disorder (ADD) is now being diagnosed in many of our regular classroom settings. ADD has many symptoms that accompany the disorder. Two of these symptoms are: inappropriate levels of sustained attention and impulse control and poor regulation of activity level to situational demands (American Psychiatric Association, 1987). It is believed that this disorder begins in early childhood and can continue on throughout childhood and adolescence. According to Barkley, Fischer, Newby, & Breen (1988), the mean age of onset is 4 years. More males than females have been found to evidence this disorder with the incidence ranging from 3:1 to 9:1 in favor of males (Barkley, 1981). Children and adolescents who experience this disorder are unable to concentrate on a given task.

Treatment programs have been devised to control ADD subjects. The most common treatment is medication. ADD subjects are prescribed a medication to help control their actions in and out of the classroom. Some of the more common medications given are Methylphenidate (Ritalin), Dextroamphetamine, and Pemoline. Another treatment being

studied is a behavior management program for educators and parents.

Over the past two decades, much research has been done pertaining to this disorder. In the 1980's much of the research concentrated on the effects of medication. ADD was just beginning to be diagnosed in the regular classroom. Medication was being given to ADD subjects based on the subjects' response to the drug to establish its effectiveness (Kimball, 1986). There was a general lack of knowledge about the effect the drugs would have on ADD subjects.

Some of the research was based on Ayres' work done in the 1960's which dealt with sensory systems. Ayres developed the Southern California Sensory Integration Tests (SCSITs) and the Southern California Postrotary Nystagmus Test (SCPNT).

Researchers hypothesized that ADD subjects could be labeled as those who responded favorably to the tests and those who did not respond favorably to the test. Researchers wanted to know how the drugs would affect the subjects' senses. These studies examined three medications: Methylphenidate (Ritalin), Dextroamphetamine, and Pemoline. Ritalin has been the drug most widely used in the treatment of ADD subjects. It has been shown to improve classroom performance.

(Research also concentrated on the amount of time Ritalin lasted.) Some of the medications must be taken at school which can be embarrassing to some ADD subjects.

In the 1990's, research continues on the effectiveness of drugs, although research has become more specific. Studies have been done that have revealed the effects of these drugs on learning.

Another area that was examined dealt with the effects of drugs and how they were related to age and gender. Most of the research has focused on boys. Now that we know some of the side effects of the various drugs that have been studied, research has been conducted to search for another method of treatment.

One treatment method that has been examined is a program of behavior management for parents and teachers. Studies were done on behavior management alone and in combination with drugs. Parents have been closely involved in previous studies with the behavior management program.

With the increasing number of ADD subjects, we need to find an effective treatment program that will not affect the subjects in a negative manner. Educators need to be aware of behaviors that are

characteristic of ADD. In the classroom, we must make adjustments to accommodate ADD subjects.

Statement of the Purpose

The purpose of this study is to review and analyze the literature pertaining to Attention Deficit Disorder (ADD). The following questions will be addressed in this study:

1. Which treatment is most effective with ADD subjects: behavior management or medication?
2. What are the controversial issues relating to ADD?
3. What are the gender and age differences in ADD subjects?
4. What is the position of the State Board of Education regarding ADD subjects?

Need for the Study

Attention Deficit Disorder is becoming more common in the regular classrooms. It is estimated that 3% to 5% of school-aged children in the United States have symptoms of ADD (State Board of Education Statement on Attention Deficit Disorder, August 20, 1992). Prior to this time, most

ADD subjects were in special classes, but now they are being mainstreamed into the regular classroom. With this shift of ADD subjects into the regular classroom, educators need to be aware of their special needs. A common practice is for these subjects to be ignored and just promoted to the next grade.

Limitations of the Study

The following issues are limitations to this study:

1. Research was only obtained from one college library.
2. The search for research presently used only encompasses research done in the last two decades.
3. Research in this area is limited.

Definition of Terms

The following terms will be defined in this study so that there is no confusion about their use.

Attention Deficit Disorder (ADD)--A disorder characterized as comprising of developmentally inappropriate levels of sustained attention and impulse control and poor regulation of activity level to situational

demands (American Psychiatric Association, 1987).

Children and Adolescents--Subjects having ADD, ranging in age from 5 to 13 years of age.

Medications--Drugs used in the treatment of ADD.

Methylphenidate (Ritalin)--Medication with a central nervous system stimulant which is the most common treatment for ADD.

Dextroamphetamine--Medication with a central nervous system stimulant which has a longer half-life than Ritalin.

Pemoline--Medication with a central nervous system stimulant which has a longer effective span of action.

CHAPTER II

REVIEW OF THE LITERATURE

With a higher incidence of ADD subjects being mainstreamed into the regular classroom, educators need to be aware of symptoms of the disorder and characteristics of ADD subjects. Educators need to be willing to accommodate the ADD subjects and assist them in their learning. In order to accomplish this task, educators should be aware of treatment programs available and how they can affect the various ADD subjects. In this chapter, treatment programs will be examined. Each program can enhance the learning of ADD subjects when instituted and monitored appropriately.

Behavior Management

Barkley (1991) has devised a behavior management program to be used with ADD subjects. It involves training parents and families to deal with ADD subjects in and out of the home. The program is based on many theories. Hanf's Two-Stage Program for Noncompliance (1969) has been used to train parents on how to be attentive to appropriate and inappropriate behavior. Patterson's view on coercive parent-child

interactions (Patterson, 1976) is also included in Barkley's program. Bell's theories in bidirectional parenting are also apparent in the program. The main objective of the program is to improve the condition of ADD subjects, not to cure them. An initial screening is done on each of the subjects. Both the subject and the family are evaluated in this screening. If no psychosocial complications are evident, then a referral is made to include the family in the behavior management training program. Most training is done in a multifamily format containing 9-10 sessions. It is desirable for both parents to be included in the program although this is not always possible. Clinicians are educated on ADD symptoms and characteristics with training in behavior management programs. At the beginning of each session, parents can review how their techniques have worked throughout the week. There must be collaboration and cooperation among clinicians and parents in order for this program to be successful. Clinicians should avoid using professional jargon. They should also incorporate humor, include modeling and visual aids, and distribute many written handouts to their audience.

The program incorporates a ten-step plan in aiding parents and families of ADD subjects. These steps include the following:

1. Step 1 is a program orientation and review of ADD. Parents acquainted with the program. ADD is discussed in its entirety, including the history, symptoms, and diagnosis. Other treatment approaches are introduced and discussed.

2. Step 2 involves understanding parent-child relations and principles of behavior management. Theories of Bell (1977) and Patterson (1976) are introduced. A discussion of child characteristics, parent characteristics, family stresses, and situational consequences and how they relate to a child's behavior is included in this step. Parents are provided with an overview of general behavioral management principles and guidelines for the management of ADD subjects.

3. Step 3 helps parents with their skills on attending positively to children. The notion of "special time" (Anastopoulos, DuPaul, & Barkley, 1991) is an option given to parents whereby they and their ADD subjects spend time together in a nondirective and noncorrective manner.

4. Step 4 involves helping parents pay positive attention to appropriate independent play and compliance of children while the children are engaged in play.

5. Step 5 helps parents incorporate and establish a home token

system. Rewards and tokens are given for compliance to parental rules and requests.

6. Step 6 utilizes the strategies of response cost and time out. This is the first time a penalty or punishment technique is discussed. These strategies can be used when children do not comply with the rules or procedures given by parents.

7. Step 7 involves extending the time out procedure to other misbehaviors.

8. Step 8 considers problems that can occur outside the home. Parents are cautioned that it helps to review rules and consequences before entering a public place.

9. Step 9 is a question and answer session which addresses how to handle problems which may arise in the future.

10. Step 10 is a booster session which is held one month later. Parents are updated on current information related to ADD. If needed, additional booster sessions are scheduled.

Two studies have implemented this program and have had positive results. One study which was conducted by Pisterman (1987) involved 50 preschool children. The training led to increased child compliance and

several improvements in parenting skills. A second study done by Pollard, Ward, and Barkley (1983) improved home behavior of ADD subjects and mother-child interactions. Still the program is only used in a few places. Another consideration is that treatments must be maintained over longer time intervals than has heretofore been the practice, but this longer time is deemed necessary if greater impact is made on the long-term outcome of children with ADD (Anastopoulos, DuPaul, & Barkley, 1991)

Medications

Most of the research concerning ADD deals with how medication affects ADD subjects. Medication with a central nervous system stimulant - usually Methylphenidate (Ritalin) and far less often Dextroamphetamine - has become the most common treatment for ADD (Pelham et al., 1989). Kimball (1986) studied how Ritalin affected an ADD child's performance on sensory integration tests. Her sample was 150 outpatient children from The Hospital for Sick Children in Toronto, Canada. Subjects were diagnosed ADD by physicians, teachers, and parents. Seventeen children were used ranging in age from 79 to 136 months. Kimball used tactile and vestibular tests along with clinical

observations to detect the effects of the Ritalin on ADD subjects. Subjects were categorized as good and poor responders to the drug. Therapeutic activities first must stimulate the brain to organize itself and then facilitate spontaneous appropriate adaptive responses (Kimball, 1986). The tests used need to be studied more because all of the relationships between the tests and the drugs are not understood.

Although Ritalin is the most widely used medicine for ADD, research has also been done on other medications. A study by Pelham et al. (1990), compared the effects of Ritalin, Dextroamphetamine, and Pemoline on ADD subjects' classroom behavior. Twenty-two boys ranging in age from 8 to 13 years were observed in the study. Each child received doses of the various medications in random order. Effects of the drug lasted anywhere from 1 to 9 hours after ingestion. Pelham et al. (1990), found that the medications did improve performance of most measures of social behavior in the classroom. Dextroamphetamine and Pemoline had less of a positive or negative effect on academic performance than Ritalin. Sleep problems were noted with all of the medications which would have an effect on the child's performance in class on the following day. Individual differences in response are not often reflected in average group data and this

highlights the need for controlled, individualized assessments of stimulant effects in every medicated child (Pelham et al., 1989). This is very important for educators to know about ADD. Educators should be in close contact with physicians regarding the subject's progress. The results of this study were only short term and it is not known whether there would be long lasting effects or not. No follow up study was done to detect any aftereffects. Balthazor, Wagner, and Pelham (1990) did a study using 19 ADD boys to determine whether medication affected performance on matching, naming, counting, and reading tasks. It was found that stimulant medication did improve performance on cognitive tasks, especially tasks where subjects were asked to process information.

It was found in all studies that medication does improve performance; however, adverse effects can result from use of medication. Swanson, Cantwell, Lerner, McBurnett, & Hanna (1991) have conducted research to determine how medications affect ADD subjects. In their studies, high doses of medication were found to make subjects somber, quiet, and still. These same subjects also became socially withdrawn; this may have adversely affected their academic performance. This study also found that many ADD subjects received higher-than-optimal doses of

medication which caused cognitive impairment. This impairment was not expected to be long term, but it was expected to have an adverse effect on the child's performance. If medications are given, dosages should be altered to fit the child. Lower dosages may help to improve the cognitive abilities of ADD children. Whalen & Henker (1991) found ADD children to have similar social problems as the subjects in the Swanson (1991) study. They pointed out that medication does improve cognitive learning, but at the expense of ruining social ties. The effects of stimulant medication appear limited in scope as well as in time (Whalen & Henker).

Controversial Issues

Many controversies exist in the area of treatment by medication. Lawsuits are now emerging which charge that Ritalin causes problems such as: subjects becoming zombies or murderers. As a result, groups have been formed which support lawsuits and promote national campaigns on antimedication. On the other hand, medication does seem to promote short term success for ADD subjects; yet, students taking medication do not seem to learn the skills that ADD subjects need to learn. Social climates for ADD subjects need to be reviewed and studied. An important

first step will be that of designing and evaluating programs for teaching. This first step will include a wider acceptance of inappropriate and noxious responding. It will also determine how to establish, nurture, and benefit ADD subjects through casual contacts, enduring friendships, and social support networks (Whalen & Henker, 1991).

Gender/Age Differences

Males have a higher incidence of ADD than females, ranging from 3:1 to 9:1 in favor of males (Brown, Madan-Swain, & Baldwin, 1991). In the Brown, Madan-Swain, & Baldwin study, 51 ADD boys and 20 ADD girls were evaluated. Measures used were demographic variables, neurocognitive and achievement tests, psychopathology ratings, and social competence. Girls were more frequently retained in school and had more problems with memory tasks. It was also found that as girls aged, they had problems with neurocognitive functioning, academic achievement, and peer relations.

State Board of Education Statement on ADD

The following information was approved by the Iowa State Board of

Education on August 20, 1992. Children with ADD can have significant learning problems in school. Three to five percent of school-aged children continue to be diagnosed as having ADD, with or without hyperactivity. Problems have been detected concerning attention span, impulse control, and activity level. As was indicated earlier, the American Psychiatric Association defined ADD as a disorder involving inappropriate levels of sustained attention and impulse control, and poor regulation of activity level to situational demands. A definition that the Iowa State Board of Education accepts is the one developed by the Professional Group for Attention Deficit Disorders and Related Disorders in 1991. In this definition, ADD is defined as a developmental disorder regarding one or more of the basic cognitive processes related to orienting, focusing or maintaining attention, resulting in a marked degree of inadequate attention to academic and social tasks. The disorder may also include verbal or motor impulsivity and excessive non-task-related activities such as fidgeting or restlessness. The inattentive behavior of a child with ADD most commonly has its onset in early childhood. This behavior is inappropriate from the beginning and continues to persist throughout development.

General education and special education need to join forces in the treatment of ADD subjects. In most cases, adapting and accomodating the ADD subjects in a general education program is sufficient. Educators need to be aware that no one program will help all ADD subjects.

Each one is unique in their abilities just as students in a regular classroom are each unique. Davila et al.(1992) offer some recommendations for regular classrooms.

1. provide a structured learning environment
2. repeating and simplifying instructions about in-class and homework assignments
3. supplementing verbal instructions with visual instructions
4. using behavioral management techniques
5. adjusting class schedules
6. modifying test delivery and test procedures
7. using tape recorders, computer-aided instruction, and other audio visual equipment
8. modifying textbooks and workbooks
9. modifying homework assignments

Many of these recommendations are simply good teaching practices.

Classroom teachers need to utilize the services of other professionals. Special education teachers can offer many suggestions regarding ADD. Many schools have teacher assistance teams that meet weekly to discuss any problems. These teams are excellent sounding boards to recommend solutions to problems teachers are having with students.

All Federal regulations and Iowa rules regarding special education apply to ADD subjects. The Individuals with Disabilities Act--Part B can be applied only to ADD subjects in special education. ADD subjects who are in regular education have rights provided by Section 504 of the Rehabilitation Act of 1973.

There needs to be more coordination of the educational program, family support plan, counseling, and medical management. Needs of family and subjects should be addressed. School personnel are a critical link in the support of the ADD subjects and their families.

CHAPTER III

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to review and analyze the literature pertaining to Attention Deficit Disorder (ADD). The following questions were asked and addressed in the study:

1. Which treatment is most effective with ADD subjects: behavior management or medication?
2. What are the controversial issues relating to ADD?
3. What are the gender and age differences in ADD subjects?
4. What is the position of the State Board of Education regarding ADD subjects?

Effective Treatment

Although parent training and behavior management for attention deficit disorder children has proven to be successful, this program still has not spread across the country. There is a limited number of studies which have tried this method which is probably the reason for its limited use. Classroom management procedures, as well as training in anger

control, self-control, and social skills are adjunctive procedures with some effectiveness (Anastopoulos, DuPaul, & Barkley, 1991). Treatments must be maintained over a long period of time which is still a shortcoming of the behavior management program.

Controversial Issues

Medication still remains the recommended treatment for ADD subjects. Most preferred is the Methylphenidate (Ritalin). It seems that there are side effects with all types of medication and yet they continue to be used. When comparing Ritalin, Dextroamphetamine and Pemoline, Pelham et al. (1989) found that all medications had equivalent effects on ADD subjects. Research completed on these medications was only short term and no long term side effects can be detected in a study of this nature. In a study done by Judith Kimball, Ritalin did improve ADD subjects performance in sensory integration tasks. Kimball (1986) believes that there are good and poor responders to Ritalin which should be detected before the medication is given. Kimball also believes that many of the same results seen with medication could also be achieved with occupational therapy.

Gender and Age Differences

Educators have seemed willing to try different possibilities for treatment. With the success of behavior management and occupational therapy being reviewed, educators may see more of these programs available.

Iowa State Department of Education's Position

With many ADD subjects being shifted into the regular classroom, adaptations and accommodations need to be made. The Iowa State Department of Education refers to William Davila's policies when making recommendations for adaptations in the classroom. Many of the same adaptations need to be made for other learners in our classrooms. The Cedar Rapids Community School staff has adopted a handbook for ADD subjects; classroom guidelines are offered in the handbook to accommodate ADD subjects (See Appendix A). Many of these same recommendations seen in Davila's work, human services publications, and other school handbooks.

Conclusions

The following conclusions can be drawn from this review of Attention Deficit Disorders in children and adolescents.

1. Studies show that medication is the primary source of remediation for ADD subjects. Behavior management is effective, but there has been a lack of long-term studies to prove this effectiveness. Controversies are emerging between the two types of treatment.
2. Educators, physicians, counselors, and other related professionals need to examine all of the factors in an individual's treatment. Age and gender need to be considered as well as reactions to medications.
3. The State Board of Education has taken a position of mainstreaming ADD subjects into the regular classroom. Educators need to be willing to adjust their classroom to meet the needs of these ADD subjects.

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APPENDIX A

Classroom Management Techniques

Avoid open space classrooms whenever possible.

Make every attempt to keep visual and auditory distractions to a minimum.

Preferential seating ... preferably away from high traffic areas and activity centers.

Take care to gain the student's undivided attention when giving instructions... use verbal and physical cues (i.e. light touch on the shoulder)

Provide simple, short, clear directions. Break large tasks down into smaller components. Tasks will appear less overwhelming to the student.

Talk slowly and be willing to repeat instructions frequently if necessary.

Accompany verbal instructions with visual aids (pictures, diagrams, models, outlines).

Use "hands-on" concrete methods for instruction whenever possible.

Check with the student periodically to see if instructions are being comprehended.

Assist the student with the use of an assignment notebook.

Make careful gradual transitions into new material. Relate new information to old.

Use review techniques consistently at the beginning and end of lessons.

Try to actively involve the student in the learning process.

Provide the student with regular breaks from seatwork and passive listening activities.

Use of a tape recorder can be helpful for keeping a record of lessons or instructions.

Use of a typewriter or computer may help with completion of writing assignments.

Headphones diminish extraneous noise and help the student gain an ability to listen and understand.

Encourage students to ask questions if they are confused.

Reinforce any positive initiative.