Controversy: does psychoactive medication help or harm the hyperactive learning disabled child?

Catherine Jean Eschete

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THE CONTROVERSY: DOES PSYCHOACTIVE MEDICATION HELP
OR HARM THE HYPERACTIVE LEARNING DISABLED CHILD?

by

Catherine Jean Eschete

A RESEARCH PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN EDUCATION
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This research paper has been approved for the Graduate Committee of the Cardinal Stritch College by

Sister Jeanne Marie Halber
(Adviser)

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CHAPTER I

INTRODUCTION

During the last thirty years, a variety of pharma­
cologic agents have been administered to learning disabled
children. Although the use of these drugs has been long
and diversified, an accurate assessment of the advantages
and disadvantages of using chemotherapy with children having
learning disabilities poses considerable problems.

Despite the lack of knowledge concerning the specific
effects of psychoactive medications in learning disabled
children, they are frequently given these medications as
if the behavioral consequences of such drugs were already
known.

Since the effects of many psychoactive medications
are not really predictable, shouldn't one question why so
many children are placed on these drugs without some effort
to measure their effectiveness?

Even though most of the research concerned with
psychoactive drugs and learning disability children seems
to confirm that there are some beneficial results connected
with the administration of certain drugs, these results certainly are not universal. Some studies have even revealed an actual decrease in the learning abilities of children receiving stimulants.¹, ²

**Purpose of the Paper**

It was, therefore, the purpose of this paper to examine the positive and negative aspects of using psychoactive drugs with school-aged learning disabled children and to ascertain whether or not the positive results are sufficiently substantial to warrant the use of these behavior-modifying drugs.

The results of this paper were obtained from pre-existing research done in the field of psychoactive drug use with learning disabled children and also by means of an independent questionnaire sent by the author to all the pediatricians practicing in the Milwaukee area and surrounding suburbs, as they were listed in the Milwaukee Telephone Directory. The questionnaire was an attempt to specifically evaluate the use of psychoactive drugs with learning disabled children in the author's own milieu.


Definitions

Because this research derived its basis from behavioral disorders as they are associated with brain dysfunctions, Learning Disabilities was defined in this paper according to the definition put forth by Johnson and Myklebust\(^1\) which implies a psychoneurological dysfunction:

... We refer to children as having a psychoneurological learning disability, meaning that behavior has been disturbed as a result of a dysfunction of the brain and that the problem is one of altered processes, not of a generalized incapacity to learn.

Psychoactive drugs were defined as those drugs which effect a behavioral change in the learning disability child.

Amphetamine was defined as a drug acting as a stimulant on the central nervous system.

Hyperkinesis was defined as constant and excessive movement and motor activity.

Hyperactivity was used to explain excessive activity. This term was used to pertain to the child who seems to have a surplus of energy and who is unable to control movements for even a short length of time.

Psychogenic hyperactivity was defined as overactivity which arises from an unstructured environment rather than any organic dysfunction.

Organic hyperactivity was defined as overactivity which arises from an organic dysfunction which the child is unable to control himself.

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Choreoathetosis movement refers to the slight, irregular, jerking movements of the body caused by involuntary muscular contractions.

The specific drugs presently being used to treat learning disability children were categorized according to their physiological uses and listed by generic and trade names:

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<thead>
<tr>
<th>Category</th>
<th>Generic Name</th>
<th>Trade Name</th>
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<tbody>
<tr>
<td>Anticonvulsants</td>
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<td>Diphenylhydantoin</td>
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<td>Primidone</td>
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<td>Stimulants</td>
<td>Dextroamphetamine</td>
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<td>Methylphenidate-hydrochloride</td>
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<td>Pemoline</td>
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<td>Tranquilizers</td>
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<td>Chlorpromazine hydrochloride</td>
<td>Thorazine</td>
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<tr>
<td>Antihistamines</td>
<td>Diphenhydramine-hydrochloride</td>
<td>Benadryl</td>
</tr>
</tbody>
</table>
Summary

There is little available information on the advantages and disadvantages of using psychoactive medication with learning disability children.

The purpose of this paper was twofold: first, to peruse the available literature on psychoactive drugs and their use with the learning disability child and to obtain pertinent local information about psychoactive drugs and their use by pediatricians in the Milwaukee area and surrounding suburbs; secondly, to evaluate whether or not the research results warrant the use of psychoactive drugs with learning disabled children.

Definitions of Learning Disabilities, Psychoactive drugs, Amphetamine, hyperkinesis, hyperactivity, psychogenic hyperactivity, organic hyperactivity, and choreoathetosis were given, along with a list of the drugs currently being administered to L.D. children.

In Chapter II, the reader will find a composite of the research regarding learning disabilities and the use of psychoactive drugs.
CHAPTER II

A REVIEW OF THE LITERATURE

An Overview of the Beginnings of Drug Use with Behaviorally Disturbed Children

The history of treatment of behavior disorders in children with medications is not new. In 1937, Bradley wrote the first of a series of articles stating that the amphetamines had a beneficial effect on both learning and hyperkinesis. Bradley's surprising article indicated that amphetamines were of more value than small classes and psychotherapy.

Bradley's report was followed by numerous other reports. With the exception of one, those first studies were uncontrolled. Since then, however, well designed double-blind studies on the effects of drugs have been


reported by Conners, Eisenberg, and others. Their research included the effects of drugs on hyperkinesis and on learning disorders.

In 1958, Zimmerman and Burgemeister first used methylphenidate (Ritalin) on children with behavior disorders. Methylphenidate was found to act as a brain stabilizer, thus decreasing hyperkinesis and improving learning. The studies

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by Conners and Comly further attested to the effectiveness of the amphetamines and methylphenidate.

The era of psychoactive drugs erupted in the 1950's. Besides the amphetamines and methylphenidate, tranquilizers, antihistamines, and the Phenothiazines or anticonvulsants emerged. This group of drugs all have some double-blind, controlled studies that uphold their claims of value, but none compare to the extensive bibliography of methylphenidate and the amphetamines.

The accumulation of the literature on psychopharmacologic drugs evoked cries from parents whose children were experiencing problems in school. Those parents were demanding better educational programs. Thus, an abundance of research studies was initiated to investigate learning disabilities and deviant behavior in children. This was followed by an outcry for effective drug treatment.

The urgency for effective drug control created an environment which produced many studies which lacked long-term scientific investigation and validation.

The Problem of Terminology

This era was also besieged by other problems, one of which was terminology. The question of what type of child benefits most from the use of psychoactive medication was unclear and still remains a dilemma today.

A great deal of the problem in methodology is due to the lack of an operational definition of minimal brain dysfunction, learning problems, and deviant or hyperactive behavior. This produces confusion in the choice of drug and the evaluation of its effectiveness.

To illustrate this problem, Stewart\(^1\) in 1970 compared the characteristics of thirty-seven hyperactive children aged five to eleven, with a group of first grade children who matched the patient group except for a younger average age. The two groups were found to be "significantly different" on a number of characteristics described by mothers of the two groups.

Eighty-four percent of the hyperactive children were described as not finishing projects while none of the controls were so described as displaying this characteristic.

Fish\(^1\) takes an entirely different view. She be-
lieves that hyperactivity is a "non-specific symptom" that
may be present in a child with a mild behavior problem or
in a child with severe brain damage or schizophrenia or may
be associated with disorders of intermediate severity.
Fish states,

The type of therapy to which the hyperactive child
responds will depend upon his age, the maturity and
intactness of his central nervous system, and the
severity and nature of his psychopathology.\(^2\)

It has been estimated that 3 percent of elementary
school children demonstrate enough traits (mild and severe)
to be classified as "hyperkinetic." Such a percentage
implies that, in a group of thirty to thirty-five pupils,
one might expect to find one such child. More males than
females are usually affected and no geographical area,
country or social class is immune to hyperkinesis.\(^3\)

\(^1\)Barbara Fish, "Problems of Diagnosis and the Defini-
tion of Comparable Groups: A Neglected Issue in Drug Re-
search with Children," American Journal of Psychiatry 125

\(^2\)Ibid., p. 902.

\(^3\)Office of Child Development (Department of Health,
Education and Welfare), "Report of the Conference on the
Use of Stimulant Drugs in the Treatment of Behaviorally
Disturbed Young School Children," in Journal of Learning
One of the characteristics of the learning disabled child is hyperactivity. However, with such discrepancies in the definitions of hyperactivity and methodology one must ask the questions, "On what basis should medication be recommended?" and "How does one know when to begin to consider medication as a possibility?"

In a study done by Knobel in 1962, he suggested that there are two major types of overactivity: organic and psychogenic. Organic hyperactivity is determined by an organic dysfunction, while psychogenic hyperactivity arises from a loosely structured environment.

The organic child cannot control his behavior; the psychogenic child can physically control his behavior but has been preconditioned not to do so. Knobel states:

The organic is erratic, without direction or objective. His behavior is almost ceaseless and without change in home, school, or any other social situation, and is generally accompanied by some slight choreoathetotic movement. (Choreoathetotic refers to slight, irregular, jerking movements caused by involuntary muscular contractions) The aggressivity and impulsivity are without goal and apparently senseless. The child's inability to postpone gratification is endless and urgent whether he is at home, in school, or wherever he may be.

The psychogenic, on the other hand, ... shows some direction and intentionality in his aggressivity and impulsivity. In this child it is possible to obtain certain structure and coordination in various aspects

of his behavior which certainly might be different according to where the child finds himself or with whom he relates himself.¹

Therefore, the nonorganic hyperactive child should respond to firmness and structure on the part of parents and teachers along with behavior modification techniques. The organic child may want to respond, but is not able to. Knobel also feels that children who can benefit from medication do not show much overt acting-out behavior, but do show a profound inability to stay on task or to maintain average attention span. On the other hand, the nonorganic child can accomplish task maintenance and concentration if he is sufficiently motivated.

Definitive validation of either form of overactivity is unlikely, but an article by Murray² suggests some characteristics commonly demonstrated by children which may help parents and educators to decide whether organic or environmental causation exists:

**Organic Characteristics**

1. Does the child show very little goal-directed behavior? (He starts many projects but finishes few.)

¹Ibid., p. 31.

2. Do high motoric levels exist at home, school, everywhere?
3. Does the child demonstrate an inability to inhibit his impulsiveness?
4. Does he perform poorly on tests of visual and auditory memory?
5. Are the child's comments often unrelated to what is presently being discussed?
6. Does the child experience difficulty in logical reasoning or have problems following directions?
7. Is the child easily distracted and does he exhibit explosive and unpredictable behavior?

Psychogenic Characteristics
1. Does the child show a lack-of-goal-directed behavior, but if he becomes involved with something that interests him he has the physiological capability to pursue and to complete it?
2. Does this child demonstrate a high level of motor behavior, but individual counseling, behavior modification, and other techniques can be successful? (Note: The psychogenic child will not exhibit high-motoric behavior in all settings as does the organic child.)
3. Does the child have the ability to inhibit his behavior; does he have the ability to be reflective and plan?
4. Does the child perform well on visual and auditory retention tasks. (Note: This implies that developmental and intellectual factors are constant.)

5. Does the child manifest few, if any, "off the track" or dysrhythmic responses?

6. Deficient reasoning processes and ability to follow directions are seldom seen as hard signs. These capabilities exist if the child decides to use them.

7. This child's behavior is more calculated and premeditated than the organic child's.

Having established some criteria for separating organic hyperactivity from psychogenic hyperactivity, what other measures should be utilized before a drug therapy program is recommended? First, educators should measure the specific behaviors which are handicapping the child academically and socially. These data should be collected in a systematic way. This will assure an objective description of the behavior and allow the observers an opportunity to remeasure the deviant behavior after the introduction of medication.

The teacher is in the best position to record anecdotal records and the school psychologist can collect baseline data if the teacher is not familiar with these procedures.
Observations should be taken often and at different times of the day throughout the week.

After collecting the data, the second step is to meet with the child's parents. The teacher and psychologist relate to the parents their findings along with the techniques that have been used to modify their child's behavior. If none of the treatments have met with success, the teacher and psychologist may suggest that the parents see their doctor with regard to some form of drug therapy for their hyperactive child.

If the parents agree, the third step involves forwarding all pertinent records to the child's physician. Along with these records the physician should make his own examination and diagnosis. This would include the following:

1. A complete medical history
2. A physical examination which would include a routine neurologic examination and
3. A special neurologic evaluation for minor neurologic dysfunction.

Finally, if the physician's evaluation coincides with the other professionals' findings, with permission of the parents, the hyperactive L.D. child is placed on a psychoactive medication.
Drug Therapy

When it is determined that medication is warranted in the case of a learning disabled hyperactive child, many questions should be investigated: (1) What drugs will be used? (2) How do these drugs work on the central nervous system? (3) How successful are the drugs? (4) What side-effects might one expect to see? (5) What improvement should be seen in the behavior, cognition and motor behavior of the child?

Numerous drugs have been used in the treatment of behavioral disorders in children but Eisenberg, Laufer and Denhoff, Millichap and Fowler and Werry to name a few have found the amphetamines (Dexedrine) and methylphenidate (Ritalin) to be the most effective drugs in treating hyperactivity. The drug Pemoline (Cylert) also was cited as significant in treating this symptom.\footnote{See L. Eisenberg, "The Management of the Hyperkinetic Child," Developmental Medical Child Neurologist 8 (1966): 593-598; M. Laufer and E. Denhoff, "Hyperkinetic Behavior Syndrome in Children," Journal of Pediatrics 50 (1957): 463-474; J. Millichap and G. Fowler, "Treatment of Minimal Brain Dysfunction Syndrome," Pediatric Clinics of North America 14 (1967): 581-599.}

The decision to administer one or the other of these drugs depends largely on the physician's experience with the drug and how the child responds to the drug.

The site and mechanism of action of the stimulant drugs in hyperkinesis was not definitely established at the time of this study. However, several theories were available for review: the studies by Eisenberg, Bradley, Conners and Rothschild have found that amphetamines, which normally act as stimulants, producing increased activity, have been found to paradoxically reduce activity and increase task performance in hyperactive, learning disabled children.

There is also some evidence to suggest that the general state of the organism, that is the level of activity or metabolism in the nervous system, prior to the administration of the stimulant drug becomes a determining factor in the action of such drugs. This suggests that the

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so-called paradoxical calming or depressant effects of amphetamine on both normal adults and hyperactive children can be accounted for by the theory that amphetamines will increase arousal when the initial level of arousal is low but will decrease arousal when the initial level of arousal is high.

Therefore, children who are not engaged in hyperactive behavior should not be given medication as this will promote activity rather than inhibit it.

Knobel perceives the problem as one of the lack of cortical maturation. The hyperactive child expresses himself with typically subcortical behavior characterized by lack of control, poor reality-testing capacity and handicapped motor-abilities. He believes that pharmacologically, methylphenidate probably acts like amphetamine as a cerebral stimulant affecting the cerebral cortex, allowing for a true integration of behavior.

Conners and Rothschild\(^1\) in 1968 stated that the drug action in the hyperkinetic child is not a pharmacologically true paradoxical effect, but rather a direct stimulating effect of the amphetamines which causes an increase in general alertness and excitation along with an increase in the ability to focus attention.

**How Successful is the Drug?**

In January, 1971, the Office of Child Development and the Office of the Assistant Secretary for Health and Scientific Affairs, conducted a conference on the "Use of Stimulant Drugs" with behaviorally disturbed children.\(^2\)

This conference concluded that medicine does not "cure" the hyperactive condition, but a child may become more susceptible to educational and counseling efforts. It was suggested that drugs administered over a short term and at a critical age, could provide the assistance needed to promote further development in the child.

The conference further concluded that stimulant medications are beneficial in only about one-third to two-thirds of the cases in which trials of the drugs are warranted.

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\(^1\)Conners and Rothschild, "Drugs and Learning in Children," pp. 191-223.

How a child will respond to stimulant medication cannot be prejudged. When psychoactive drugs are given in adequate doses and a favorable response occurs after a short period of time, it can be concluded that the drug is effective. Conversely, if after an adequate period of time no noticeable improvement is evident, the drug can be terminated or the dosage regulated.

If stimulants improve the attention of the hyperkinetic child, he is likely to spend more time in concentrated tasks and less time demonstrating inappropriate behavior.

The Side-Effects of Psychoactive Medication

Along with the beneficial action of amphetamine and methylphenidate on hyperkinesis some secondary negative effects must be considered. These negative effects frequently receive only passing attention and they may with prolonged medication seriously affect the physical well being of the learning disabled child.

In general the only toxic reactions noted by physicians associated with the amphetamines and methylphenidate are:
insomnia, loss of appetite, gastrointestinal disturbance, irritability, crying and headache.¹

Increase in anxiety, temper tantrums and an exaggeration of the pre-existing hyperactivity have also been reported.²

Most authors agree that these toxic effects are usually mild and cessation of therapy or dosage adjustments rectify the problem.³

Bradley,⁴ in his 1950 follow-up study of 340 patients reported no major problems with toxicity. He also found no deleterious changes in blood pressure, pulse, liver function, kidney function or blood-forming organs.

Epstein and others⁵ reported similar findings but also discovered that children who seemed to have damage of


the nervous system excreted amphetamine in larger amounts and more rapidly than did those whose hyperactivity could not be attributed to central nervous system impairment.

In 1967, Millichap and Fowler\(^1\) analyzed the drugs used for hyperactivity according to effectiveness and toxicity. They found methylphenidate to be the drug of choice and amphetamine sulfate the second most successful drug.

The side-effect of anorexia was examined in a study by Lasagna and Epstein.\(^2\) These authors observed a diminished appetite and a loss of weight in hyperkinetic children placed on amphetamine.

Knights and Hinton\(^3\) observed a significantly greater incidence of appetite loss in a group of hyperkinetic children given methylphenidate over a group of similar children treated with placebo.

Another secondary effect of dextro-amphetamine and methylphenidate which has caused some concern involves the

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effect of stimulant drugs on the cardiovascular system.

Some studies have suggested that methylphenidate does not promote hypertensive effects and does not produce an increase in a child's heart rate. A more recent study, however, using methylphenidate, reported an increase in the basal level of heart rate during rest. Dextro-amphetamine, according to the Dexedrine Reference Manual, has little or no significant effect on the cardiovascular system.

Needless to say, the effects of psychoactive medication on the cardiovascular system still warrant considerable research.

In 1973 Safer and Allen reported that the long-term use of dextro-amphetamine in hyperactive children


4Dexedrine Reference Manuel (1959), S.V. "Dextro-amphetamine."

caused significant growth suppression in height and weight, and that the long-term use of methylphenidate, when given in doses over 20 mg., caused growth retardation but to a lesser degree than dextroamphetamine.

Safer and Allen\(^1\) found in a follow-up study done in 1975, that when the stimulant medications dextroamphetamine and methylphenidate were discontinued over the summer months, hyperactive children displayed a weight gain significantly greater than that of comparable hyperactive children whose medication was continued throughout the summer. In fact, discontinuance of the medication resulted in a growth rebound for this period which was 15 to 68 percent above the age-expected increment.

With long-term abuse of the amphetamines, psychotic-like episodes have been found, and one study reported psychosis in a child receiving minimal amounts (10 to 15 mgs. per day) of dextroamphetamine. The symptom disappeared after discontinuance of the drug and reappeared when it was started, but disappeared gradually even though dextroamphetamine was continued, and had not reappeared after one year of therapy.\(^2\)


The potential addictive properties of psychoactive drugs such as dextro-amphetamine and methylphenidate are somewhat unclear, although recent evidence indicates that the use of such drugs in the treatment of hyperkinetic children has resulted in no clear support for addiction.\(^1\)

Evidence for the addictive properties of psychoactive drugs seems to depend upon two factors—dosage and age. The risk of the misuse of stimulant drugs becomes prevalent in adolescents, who experiment with the effects of excessive dosages to create excitement or to combat fatigue. This is one of the chief reasons why stimulant drugs are not often prescribed for children after eleven or twelve years of age.

The use of stimulant drugs in the treatment of hyperkinetic children does not seem to produce a "pep-up" or "high."\(^2\) The dosage is not given in sufficient amounts to supply the drug abuse. The daily dosage of dextro-amphetamine is 15 to 20 mgs. and in the case of methylphenidate, 40 to 60 mgs. per day is normal. The drug addict may use as much as five grams of methylphenidate in a single day.\(^3\)

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Finally, there is also the psychological stigma the public often imposes on the child taking psychoactive medication. He is often called a "drug-taker" and, in fact, treated as an addict.

How Psychoactive Medication Affects Behavior and Learning

If medication has been successful, one should see some noticeable improvement in the academic, motor and social behaviors of the learning disabled child.

Werry and Sprague in a study using dextro-amphetamine, clearly demonstrated that after a four-week period, the parents of the children placed on medication noted a considerable decrease in excessive activity at home, in contrast to the children treated with placebo.

Motor behavior has been studied by many diverse methods in the laboratory. While there is some failure to replicate and there are some inconsistencies in the data, they generally support the claims that in hyperactive children directed or controlled motor activity is increased by psychoactive medication. However, various stimulants have diverse effects on motor functions.

In a recent comparison of Pemoline (Cylert) and dextro-amphetamine, it was reported that Cylert

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was significantly superior to Dexedrine in improving fine motor control in a set of scores derived from the Lincoln-Oseretsky Scale.¹

Studies of free-field activity, using actometer measurements and time-stop photography, showed that stimulant drugs actually increase the total amount of activity.² These authors discovered that it is the quality of activity rather than the amount of energy expanded that is changed by drugs.

Wade³ reported in 1976 that in a study with twelve normal and twelve hyperactive children in which some of the hyperactive students were placed on methylphenidate and some on placebo, the medicated hyperactive children performed more like their normal peers than those who received a placebo.

The studies by Bradley and others demonstrated that Dexedrine and Benzedrine affected general intelligence measures.

¹Connors, "Recent Drug Studies with Hyperkinetic Children," p. 479.
A report by Page and others\textsuperscript{1} using hyperactive children medicated with Pemoline and placebo noted a significant increase in the WISC Full Scale and its Performance I.Q. component; Wrat reading and arithmetic grades; and Factor II of the Lincoln-Oseretsky Motor Performance Test. They also found improvement in the Pemoline group over placebo on the Goodenough-Harris Draw-A-Person. The improvement on the WISC Verbal I.Q. was significant at the 10 percent level. However, the Porteus Maze test, found by some to be sensitive to stimulant drugs, did not discriminate between the Pemoline treated subjects and those on placebo.

Knights and Hinton\textsuperscript{2} found that Ritalin significantly increased WISC Performance I.Q. in hyperactive children. This was also noted by Epstein, et al.\textsuperscript{3}

Conversely, Finnerty, et al., Conners and Rothschild and Conners et al, failed to find improvement of WISC I.Q. scores.\textsuperscript{4}


\textsuperscript{3}Epstein, "Correlation of Dextro-amphetamine Excretion and Drug Response in Hyperkinetic Children," pp. 136-146.

Sprague, Barnes and Werry\(^1\) showed in their research that methylphenidate increases the number of correct responses when compared to children medicated with placebo and thioridazine (Mellaril). Conners, Eisenberg and Sharpe\(^2\) also discovered that rote paired-associate learning is significantly enhanced by the stimulants.

In a more recent study, however, Rie, et al\(^3\) found that while Ritalin affects behavior it did not enhance learning and may in fact mask academic problems.

It should also be noted that in studies comparing stimulants with the Phenothiazines or tranquilizers, the latter show impairment of learning and cognitive functions in hyperactive children.\(^4\) This may also be said in regard to the use of Dilantin and the tricyclic antidepressant compounds with hyperactive I.D. children.\(^5\)

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\(^2\) Conners, Eisenberg, and Sharpe, "Effects of Methylphenidate (Ritalin) on Paired-Associate Learning," p. 20.


\(^4\) Conners, "Recent Drug Studies with Hyperkinetic Children," p. 482.

\(^5\) Ibid.
Discussion

How does one explain the great diversity of findings in the use of drugs with hyperactive learning disabled children? One explanation may lie in the great heterogeneity of the subjects. In other words, the effects of psychoactive medication do not pertain to all "hyperactive" children. This problem of diagnostic heterogeneity is an important issue in drug research.

Secondly, the subjects differ on several parameters of brain functions.

Summary and Conclusions

Since 1937 when Bradley discovered the paradoxical effects of the amphetamines on hyperactive learning disabled children there have been many studies. Some of these supported Bradley's findings others did not. Many problems are associated with the use of drugs with children.

Terminology is a major problem. Defining what type of child benefits most from psychoactive medication remains to be determined, although the organically-based hyperactive child has shown the most progress when placed on drugs.

It was found that when a child is suspected of needing medication to control his hyperactivity a thorough assessment by the teacher, parents and physician is essential.

It was not determined at the time of this study how the drugs actually affect the brain.
Methylphenidate and the amphetamines were found to be the most effective drugs in treating the hyperactive L.D. child.

Psychoactive medication was found to be of value in only one-third to two-thirds of the cases where they were administered.

Side-effects include insomnia, loss of appetite, cardiovascular symptoms and growth retardation to name a few.

The use of psychoactive medication in the treatment of hyperactive children has resulted in no clear support for addiction. However, it was found that age and dosage play an important role.

The reported research has also supported claims that directed or controlled motor activity is increased by medication.

It is still debatable whether or not drugs affect I.Q. scores.

Therefore, the results of this study led the author to arrive at the following conclusions:

First, a drug program should ensue only after other treatment has been initiated, given a fair trial period and assessed as unsuccessful; and secondly, a thorough medical, social and academic evaluation must be undertaken.

The positive effects of medication would include improvement in the areas of concentration, alertness and hyperactivity.
The properly medicated child would present less of a discipline problem both in social and academic settings. It was found that the hyperactive L.D. child would be less socially isolated from his peers and that medication would allow him to be more predisposed to a learning atmosphere.

Although the psychoactive drugs do have a place in the treatment of hyperactive learning disabled children, the author concluded that there are many more negative than positive aspects associated with their use that must be considered and researched more thoroughly.

Those problems would include the high incidence of placebo effect, growth retardation, loss of appetite, a lack of studies to determine long-term effects of the drugs, the discrepancies in the cardiovascular research, the inability to pre-judge how a child will react to medication and the fact that psychoactive drugs are successful in only one-third to two-thirds of the cases where they were used.

Another important aspect to be considered was the fact that drugs offer only a temporary solution. The studies showed that once the medication is stopped, the symptoms reappear.

Therefore, the author felt that the hope for the hyperactive L.D. child lies not in psychoactive drugs but in comprehensive programs which involve parents and teachers.
Better trained and informed teachers mean less boredom and disinterest in the classroom for the hyperactive L.D. child. This promotes an atmosphere of learning not chaos. Parents who are aided by remedial techniques, psychological advice and understanding teachers will contribute more to the self-confidence and self-image of the hyperactive L.D. child than any psychoactive medication.

Finally, if it is determined that a psychoactive drug program is the only alternative that will allow the hyperactive L.D. child to function more "normally" in his environment, it should only be undertaken after a critical evaluation and with caution.
CHAPTER III

THE SURVEY

The Questionnaire and Its Results

The author sent out a questionnaire\(^1\) to all the pediatricians in the Milwaukee area and surrounding suburbs. The purpose of the questionnaire was to ascertain how local pediatricians felt about the use of psychoactive medication with learning disabled children. Sixty-eight questionnaires were sent out and fifty-one were returned, however, one of the questionnaires was returned not completed, containing only the comment that "there is no such thing as an L.D. child."

The survey yielded the following results: the majority of the doctors (thirty-six out of fifty) fell in the forty-to-fifty-year-old age group. With the exception of four, all the doctors were male. Thirty-three of the doctors practiced in Milwaukee and of the doctors who replied, thirty-five out of fifty had been in practice for ten to fifteen years. Forty of the fifty doctors practiced out of

\(^1\)See Appendix for copy of questionnaire.
private offices. All the pediatricians had school-aged learning disability children as patients. Forty-three replied that they had at least one and not more than twenty. Only one of the fifty doctors stated that he was not familiar with the criteria used in determining a learning disability. The criteria most frequently checked by the doctors in order included: (1) short attention span; (2) a history of hyperactivity; (3) distractibility with or without aggressiveness; and (4) learning, speech or memory deficits. An abnormal E.E.G. reading was used least often as an assessment technique. Several of the doctors commented on its unreliability. The only discrepancy between these criteria and those in the reported research was that "hyperactivity" was used most often to diagnose a problem.

Only ten of the fifty doctors did not prescribe drugs for their L.D. patients. Some of the ten doctors who did not recommend drugs offered their reasons for this decision.

One doctor stated,

"Hyperactivity is usually an extension of normal male child behavior. It is best treated by teachers, not doctors. One on one tutoring is the most effective prescription for the hyperactive child."

Another doctor wrote:

"Today's world is tough on our kids. School underachievers need to be helped. There are many ways of helping. Quick and easy are of course medications. . . . A team approach is really necessary. The diagnosis of "hyperactivity" is abused and overcalled."
Other questionnaires included these replies:

I do not prescribe drugs. I refer these patients for complete evaluation to the medical psychologist, psychiatrist and specialty persons when appropriate.

"Some parents," said one pediatrician, "want their kids on the drugs long after the problem has disappeared."

The drug prescribed most often was Ritalin or Methylphenidate followed by Pemoline and Dexedrine. The only discrepancy here was the fact that Pemoline rather than Dexedrine was rated as the second most prescribed drug. On many questionnaires many doctors commented that they were stopping the use of Dexedrine.

Of the other drugs listed on the survey, Mellaril, Benadryl, Diamox, Dilantin and Mysoline were used by some doctors. When the pediatricians were asked what they felt the most significant advantages of using drugs with L.D. children were the majority rated better attention span as the number one advantage followed closely by less hyperactivity. These data correlated with the research statistics.

The doctors also confirmed the research data when they found anorexia and retarded growth to be the most significant disadvantages of drug use. However, some doctors did report blood dyscrasia and abuse as effects seen in their practices.
The majority (forty-three) of the pediatricians reported drugs to be somewhat successful. Twenty-seven doctors prescribed drugs on a day-to-day basis and all but two of the doctors who prescribe drugs stated that they should not be limited to academic settings. One doctor wrote:

I recommend drugs in other than academic settings because teachers are not always as observant as they think they are and, in fact, have tunnel vision in observing patients.

Most of the doctors (forty) saw the child placed on drugs once every two months after the initial trial period and the doctors often changed and adjusted the dosages of the drugs.

The studies indicated once every two months is the usual amount of time for seeing a child on psychoactive medication.

**Conclusions**

From the results of this survey, the author concluded that the majority of the pediatricians in her milieu do prescribe psychoactive medication for the L.D. child. It was also found that they do have some confidence in the use and success of these drugs although they feel more research is needed to verify their safety and effectiveness.
APPENDIX

Questionnaire Sent To All Pediatricians

1. What is your age?
   ___ 20-30    ___ 30-40    ___ 40-50    ___ 50-60
   ___ 60-70    ___ 70 and over

2. What is your sex?    ___ F    ___ M

3. In what area of Wisconsin do you practice?

4. How many years have you been in practice as a pediatrician?
   ___ 1-5    ___ 5-10    ___ 10-15    ___ 15-20    ___ 20-25
   ___ 25 and over

5. In what type of setting do you practice?
   ___ Private Office    ___ Hospital
   ___ Clinic    ___ Other, please specify

6. Do you have school-aged learning disability children as patients?
   ___ Yes    ___ No

7. (Approximately) How Many?
   ___ 1-20    ___ 20-40    ___ 40-60    ___ 60 and over

8. Are you familiar with assessment techniques used in diagnosing learning disability children?
   ___ Yes    ___ No
9. Which of these criteria do you use in determining a learning disability?

__ A history of hyperactivity
__ Short attention span
__ Distractibility with or without aggressiveness
__ Poor sleep habits
__ Perseveration
__ Neurological abnormalities
__ Poor coordination
__ Visual or hearing difficulties

**Spastic Conditions**

**Abnormal EEG readings**

**Learning, speech or memory difficulties**

**Convulsive disorders, headaches**

**Other, please specify**

10. Do you prescribe drugs for your learning disability patients?

__ Yes  __ No

11. On what research basis?

12. Which drugs do you prescribe?

__ Dilantin  __ Mellaril
__ Mysoline  __ Vistaril
__ Peganone  __ Equanil
__ Diamox  __ Miltown
__ Tridione  __ Hostyn
__ Paradine  __ Ritalin
__ Milontin  __ Dexedrine
__ Zarontin  __ Thorazine
__ Benadryl  __ Other
__ Librium
13. If you do prescribe drugs for learning disability children, which drug do you prescribe most often and why?

14. What do you feel are the most significant advantages of using drugs with learning disability children?

- Less hyperactivity
- Loss of aggressiveness
- Better attention span
- Lessening of spastic conditions
- Better coordination
- Other, please specify
- Better sleep habits
- Lessening of spastic conditions
- Other, please specify

15. What are the most significant disadvantages of using drugs with learning disability children?

- Possible addiction
- Innate personality changes
- Unforeseen side-effects
- Other, please specify
- Allergic reactions
- Other, please specify
- Overuse

16. How successful do you feel drugs are in the treatment of learning disabilities?

- No success
- Very successful
- Low success rate
- Outstanding results
- Somewhat successful

17. Do you stipulate under what conditions the drug is to be administered or do you prescribe the drug on a day-to-day basis?

- Behavioral conditions
- Day-to-day basis
18. Should the use of drugs with learning disability children be limited to academic settings? Why?
   __ Yes __ No

19. How often do you see the learning disability child after prescribing drugs for him or her?
   __ Once a week __ Once every two months
   __ Once a month __ Other, please specify

20. Do you often have to adjust dosages and change drugs with learning disability children?
   __ Yes __ No

21. Is more research in the area of drug therapy with learning disability children warranted?
   __ Yes __ No
SELECTED BIBLIOGRAPHY
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Books


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