Use of medication for hyperactive children

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THE USE OF MEDICATION FOR
HYPERACTIVE CHILDREN

by

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A RESEARCH PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN EDUCATION
(EDUCATION OF LEARNING DISABLED CHILDREN)
AT CARDINAL STRITCH COLLEGE
Milwaukee, Wisconsin
1974
This research paper has been approved for the Graduate Committee of Cardinal Stritch College by

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Date Sept. 30, 1974
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CHAPTER I

INTRODUCTION

The Effect of Medicine in Education

The period of time between the 1960's and the 1970's seems to be a period of distrust and anger. The American public was getting tired of financing a civil war which had gone on for centuries which they could not call a war. The assassination of three prominent Americans, including President Kennedy, gave the average American a feeling that this great country of ours was not that great. The violence and useless spending of large amounts of money on a war served to take its toll in the American youth. Their dismay in the seemingly uncaring world around them took its toll in the form of drug abuse and dropping out of school. Along with this problem which concerned both education and medicine, crept the American mania for a quick cure. People wanted a pill to take care of any ailments. This seemed to get a foothold in education with all the special programs to eliminate illiteracy and dropouts. The medical profession continued this quick cure mania in dealing with education and soon
articles such as "Hyperactive Children: A Rational Approach to Medication,"\(^1\) "Drugs to Control Classroom Behavior,"\(^2\) "Pills for Classroom Peace"\(^3\) began to appear. Physicians were prescribing a medical cure for an education problem concerning hyperactive children.

**The Problem of Defining Hyperactivity**

What is hyperactivity? Is it a syndrome or is it part of a syndrome or for that matter, is it a behavior disorder? Webster defines it as an adjective meaning excessively or pathologically active. Chess defines the hyperactive child as "one who carries out activities at a higher rate of speed than the average child, or is constantly in motion or both."\(^4\) There are numerous other attempts to define hyperactivity linking it with minimal brain damage, visual-motor problems, hyperkinetic impulse disorder, distractibility, impulsivity, limited attention span, poor concentration, low frustration tolerance,


neurological "soft" signs, visual perceptive difficulties and specific learning disabilities. These lengthy descriptions of a problem that a child may have tend to confuse rather than simplify the problem for the people trying to work with children exhibiting these behaviors.

The apparent confusion of what exactly hyperactivity may be and the subsequent treatment of it with the use of drugs will be the main focus of this paper. This researcher will also attempt to bring into focus other very related topics concerning the treatment of hyperactivity. The first related area seems to be that of who is defining the symptom. The neurologist will use such terms as neurological "soft" signs while the teacher would use such terms as short attention span, excessive movement or distractibility. The psychologist, on the other hand, would concern himself with such terms as behavior disorders, impulsivity, defense mechanisms. Add to these professionals the doctor who is requested by parents for an immediate cure to a very frustrating problem and you have a very strong case for an inaccurate diagnosis and improper prescription.

Professionals who rely on research for their direction are finding inconsistencies within that research.

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when dealing with hyperactivity. There seems to be difficulty in isolating this disorder so that a proper statistical analysis of hyperactivity can be undertaken. This becomes the second prominent component of the inconsistencies when defining hyperactivity.

Another area that this researcher will investigate is the problem of proper treatment of hyperactivity and what developmental damage is done to children who must rely on medication to control the impulsivity, short attention span, and other behavior problems that all children must face in the normal growth from childhood to adulthood. The argument against using medication to control hyperactivity, distractibility and short attention span is a sound one. During the adolescent growth period it seems questionable to add a crutch to the normal development of an adolescent when all he or she may need is practice at developing these traits and the patience of educators to allow these students to do this in the educational arena.

Defining the word hyperactivity or defining the child who exhibits a behavior disorder was an interesting dilemma. If one just defines the word it implies that this symptom is singular in nature which is totally false. On the other hand, if the child who exhibits this symptom is defined, the definition tends to imply that that symptom is the disease and that by treating the symptom the disease will be eliminated, which is a medical contradiction.
An Environmentally Based Definition of Hyperactivity

For the purpose of this paper, hyperactivity will be defined as an environmentally based disorder which manifests itself by excessive sensory or motor activity. This researcher felt that the school environment plays a major role in highlighting excessive motor activity because the schools themselves are so totally motorically inhibiting. There also seems to be room for questioning when this hyperactivity seems to only be present in male children and is not thought of as a disorder in adults.

This definition is a composite definition which stresses the excessive activity which is obvious to anyone who watches children in a classroom but also stresses the possibility that the environment is a prominent, causal factor in hyperactivity. This definition is not to be confused with hyperkinesia of which hyperactivity is one of its symptoms. This researcher's definition of hyperactivity is only to apply to those children who exhibit hyperactivity without brain injury. The purpose of this approach in defining hyperactivity is to shed light on the fact that children who have tendencies in their developmental stages to exhibit excessive activity may be misdiagnosed as hyperkinetic and, subsequently, treated with medication. Many schools which are motorically inhibiting in themselves may lead to this misdiagnosis.
CHAPTER II

RESEARCH OF LITERATURE

The Inhibition-Excitation Brain Cycle

The historical development of hyperactivity parallels that of brain injury and its history. A starting point of sorts begins with Pavlov where he made this observation studying the brain.

It is highly probable that excitation and inhibition, the two functions of the nerve cell which are intimately interwoven and which so constantly supersede each other may fundamentally represent only different phases of one and the same physicochemical process.¹

What Pavlov was referring to in this study was that if there was excitation in a certain area of the cerebral cortex which actually produced a paradoxical effect of inhibition in a given region and spatially for a broader region.

While Pavlov was concentrating on the medical development of brain injury, Kahn and Cohen began to study

the relationship of prenatal encephalopathy, or brain injury to that which they called "organic driveness".\textsuperscript{1} This is a description which helped lay the foundation for a later condition known as the hyperkinetic syndrome.\textsuperscript{2} Through the work of Pavlov and Kahn and Cohen there now was present a form of research and etiology of brain injury as well as a theory of how the brain of certain brain injured children reacted when stimulated.

**The Use of Stimulants with Children with Behavior Disorders**

Bradley found that there existed a stimulant that calmed disturbed children as well as being able to improve their attention span.\textsuperscript{3} In his summary Bradley states:

> The psychological reactions of thirty behavior problem children who received benzedrine sulfate for one week were observed. There was spectacular improvement in school performance in half of the children.\textsuperscript{4}

Although only one-half of his group responded positively to the use of a stimulant, it was sufficient reason to


\textsuperscript{4}Ibid., p. 584.
believe in the validity of using a stimulant to increase the attention span and inhibit hyperactivity in children with behavior disorders.

The type of child who exhibited hyperactivity was now linked by Bradley to the diagnosis of behavior disorders. Strauss and Lehtimen made a different link. In 1947 they, through a series of observations, noted two types of retarded children; the familial or endogenous and the brain injured or exogenous.¹ They noted that hyperactivity was an important part of the distinctive behavior of the brain injured type. A distinction was made in regard to hyperactivity between children who were diagnosed brain injured and those who were not.

Their observation was:

If the brain injured child is hyperactive and disinhibited in relation to other children, these reactions are likely to be interpreted as expressions of aggressive, antisocial tendencies and treated on this basis.²

In brain injured children, however, disinhibition, hyperactivity and distractibility should be regarded as manifestations of exaggerated responsiveness to stimuli and in young brain injured children, as behavior reactions beyond the reach of effective cortical control. What they

¹A. Strauss and Laura Lehtimen, Psychopathology and Education of the Brain Injured Child (New York: Grune S. Stratton, 1947), 1:130.

²Ibid., p. 130.
were saying was that hyperactivity was different in brain injured children. A brain injured child had no conscious control over the reaction to stimuli, whereas other children's behavior could be labeled antisocial if the diagnosis of brain injury was not properly understood.

The relationship of minimal brain damage and the hyperkinetic impulse disorder was linked as one. In 1957, Laufer noted a difference.1 Laufer's hyperkinetic group was a collection of disorders seen for child psychiatric treatment, from anxiety reactions to chronic brain syndromes and childhood schizophrenia. From that point on the terms "hyperkinetic syndrome", "minimal brain dysfunction" and their synonyms have been used interchangeably without diagnosing the mental disorders as if hyperkinetic children defined a clear entity.

The Relationship of Minimal Brain Dysfunction to Hyperactivity

The question whether hyperactivity was related to a brain dysfunction or to a mental disorder seemed to get quite complicated in the 1960's and 1970's. Rosvold and Mishkin found hyperactivity linked to frontal ablations in monkeys and they suggested two forms of hyperactivity, one a motor hyperactivity due to defective inhibitory mechanisms

in the cortical motor system and the other, a generalized hyperactivity due to defective inhibitory mechanisms in the sensory sphere.\(^1\) Berlyne hypothesized that hyperactivity was a consequence of a defective cortical inhibition which causes an organism to reduce arousal level by seeking the stimulation which could ultimately induce cortical inhibition.\(^2\) The causal link with behaviors instead of organicity was made by others. Friedland and Shilkret stated "Hyperactivity becomes a means for keeping others at a distance and feeding off the development of relationships."\(^3\) This interpretation of the function of such hyperactivity has led the authors to term such instances of behavior "defensive hyperactivity".

The Brain Dysfunction Versus Behavior Disorder Controversy

Chess also states that "Hyperactivity in children can occur as an expression of anxiety and tension. A child who is under excessive stress tends among other things to express this through modification of normal motility


pattern. She also states from her earlier studies that out of the eighty-two hyperactive children seen in her private practice, only fourteen were diagnosed as brain injured. The discussion whether or not brain injury or behavior disorder are the underlining reasons for hyperactivity is directly related to whether or not the treatment of drugs to control this behavior is a relevant fact in treating hyperactivity. There is a basis for the distinction.

The Distinction Between Hyperactivity and Hyperkinesis

Whether hyperactivity is related to hyperkinesis or whether it is singular in nature was a central theme in Krobel's differentiation dealing with chemotherapy. He states that it might be possible to differentiate the hyperkinetic from the hyperactive child by close observation of behavior. He hypothesizes that, "The organic is erratic without direction or objective." His behavior is almost careless 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 be at home, in school, or wherever he may be. The hyperactive child 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.

The distinction between hyperactivity and hyperkinesis was further investigated in other studies. Fish states that, "There is no one hyperactive child. There are many types of hyperactive children. The hyperkinetic reaction in the official nomenclature refers to one particular behavior disorder of childhood."¹ She also states that "The scanty definition for the 'hyperkinetic reaction' in standard nomenclature adds to the confusion by not clearly differentiating these children from those with other behavior disorders who may also be hyperactive."²

¹Barbara Fish, M.D., "The 'One Child, One Drug' Myth of Stimulants in Hyperkinesis, Archives of General Psychiatry 25 (September, 1971): 200.

²Ibid., p. 200.
Murray agrees in the difference between the two as he stated that, "The environmentally based overactive is often referred to as the hyperactive; the organically based overactive is the hyperkinetic."¹

The importance of the distinction between hyperactivity and hyperkinesis is its relationship to the use of drugs in treatment. Numerous studies have been published stating findings in regard to the effectiveness of drugs in controlling hyperactivity. Whether the authors of these studies were dealing with hyperactive children or children with a hyperkinetic syndrome leaves open the doubt that these findings were inaccurate due to the vagueness in defining their population.

Fish² found these errors in Bradley,³ Laufer,⁴ Bender⁵ research findings.

¹Joseph N. Murray, "Drugs to Control Classroom Behavior?" Educational Leadership 31 (October, 1973):21-5.


1. Laufer did not demonstrate that hyperkinetic children responded better to amphetamines than children without hyperactivity.

2. Bradley never demonstrated that the amphetamines were more efficacious in children with hyperactivity than they were in those without.

3. Laufer found dextroamphetamine to be more effective in behavior disorders with organic components while Bender found the drugs to be most beneficial for neurotic children.

4. Bender's "neurotic behavior disorders" were the same as Bradley's "behavior disorders of psychogenic origins". Both groups of authors included hyperactive and nonhyperactive children in this category and both found that 70% improved including hyperactive and nonhyperactive children.

What Fish was saying was that the much publicized findings on the effectiveness in the use of drugs was erroneous due to the heterogeneity of the populations studied versus the homogeneity of the populations implied by the authors.

Other problems concerning the diagnosis of hyperactivity also existed. Murray suggests five concerning teacher diagnosis.¹

1. What is felt to be overactive behavior by one teacher is simply not overactive to another. Therefore, some youngsters who are recommended for medication would not be if they had a different teacher.

2. Some teachers are capable through various skills such as behavior modification techniques to control overactive behavior effectively while other less skilled or ambitious teachers will feel the need to recommend medication to control behavior.

3. Some teachers seem to be captured by a mystique surrounding the use of pills as a cure-all. Apparently, many teachers equate the power of penicillin and other wonder drugs to the behavior modification drugs and, in so doing, hope for dramatic results.

4. Recommending medication to a parent seems to suggest a degree of professionalism and knowledgeability to some teachers. It provides a way of dealing with a problem with which few parents are familiar.

5. In some instances, teachers have tried virtually all ways to control a child's behavior, and almost out of desperation they resort to recommending medication to parents, hoping that this will solve the problem.
What Murray was addressing himself to was the problem of misdiagnosis by unqualified personnel along with the fallacious assumption made by teachers that drugs can cure a problem that exists in the school environment and not within the child.

In view of the problems concerning the identification of just who is a hyperactive child and who is not there are other problems concerning drugs themselves. Side effects from taking Dexedrine which is a commonly prescribed drug for hyperactivity can be "overstimulation, restlessness, insomnia, gastrointestinal disturbances, diarrhea, palpitation, elevation of blood pressure, tremor, sweating and headache."¹ These physical side effects are apparent when the wrong dosage is prescribed. There are, however, psychological side effects that may not be so apparent. Ladd questions the use of drugs as a form of intervention.² He states that

Any form of intervention that relieves a restless or unruly child of the need, or deprives him of the opportunity to use his executive powers deprives him to that extent of the chance to develop insight and skill in self control.³

³Ibid., p. 2.
Along with the retardation of the development of self control follows the dependency on the drug to do what the human organism is capable of doing. This may turn out to be more of a problem than the original problem of hyperactivity.

Summary

In view of recent examination of the hyperactive child, the reason for prescribing medication has come under stricter watch. In the summer of 1970, the Huntley-Brinkley Show featured a news story about the Omaha, Nebraska school system using behavior modification drugs to make students behave. One of the major issues that followed this use of medication was the right of educators, parents, school administrators, and physicians in suggesting that a child be given medication to modify his behavior. Until hyperactivity can be dealt with more scientifically, the practice of prescribing medication for hyperactive children will be a controversial issue for those who are prescribing medication as well as the actual effects that medication has on hyperactivity.
CHAPTER III

SUMMARY

In the historical development of the study of man's brain, there were signs that a type of brain injury was the cause for hyperactivity. The research has shown that by stimulating a part of the brain, a paradoxical effect of inhibition followed. These two findings led many researchers to believe that medication could be used to control hyperactivity. Research findings about the effectiveness of medication on hyperactivity goes back to the 1930's where it was referred to as organic drive-ness. Since then, numerous studies were made in hospitals, out patient clinics, and private schools. Hyperactivity began to be related with such terms as hyperkinetic impulse disorder, minimal brain dysfunction, and behavior disorders. It also became a topic in the medical field in relationship to the use of medication in controlling hyperactivity.

The terminology in which hyperactivity was involved in began to get complicated when minimal brain damage and mental disorders were linked to it. This brought with it a closer look at previous findings which were either supported or refuted due to the type of
population that had been studied. What these arguments started to prove was that hyperactivity was not a single entity and it could not be accurately dealt with as such. Whether hyperactivity is part of an environmentally based disorder has direct implications when dealing with medication. As one looks at previous research findings since 1930, it is obvious that the types of populations described then would be different if done today. This would lead one to believe that the medication prescribed was given to a heterogeneous population which was described as homogeneous.

The medical field has pointed out recently that long term effects of the use of drugs for any reason have bad effects on the human being. People everywhere are told not to smoke, not to drink large amounts of coffee, and that aspirin may have ill effects if taken regularly. With this type of research coming to the forefront, it would seem that a substitute should be found to replace the practice of using medication with hyperactivity.

The education field can come up with ways of accommodating children who are hyperactive. Behavior modification along with reduction of class size can help a child learn to control his energy without the use of medication. This may be a slower process, but in the long run the child ends up the winner.

There is evidence that some children respond remarkably well to medication, however, these cases are
small compared to all the children receiving it. These cases are usually substantiated with accurate observations in various settings by professional as well as being continually reviewed by the physician. The others become victims of our environment and our fast paced society. They are the children who are not allowed to use their own resources to develop the inner stamina that it takes during a period of growth.

Until medical research can clearly delineate between which hyperactivity is organically based and which hyperactivity is environmentally based, it would be better for educators to provide them with accurate observation along with behavior techniques that seem to work. This would help to reduce the number of children receiving medication as well as provide the medical field with information on children with the hope that the use of medication to control behavior could be curtailed, if not eliminated.
BIBLIOGRAPHY
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Books


Periodicals


