

BRIEF PSYCHIATRIC HOSPITALIZATION AND ITS EFFECT ON THE EDUCATIONAL
PLACEMENT OF STUDENTS WITH ATTENTION DEFICIT DISORDER

by

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ABSTRACT

Research has shown that the effect of psychiatric hospitalization on the educational placement of students is a more restrictive educational placement. In a modification of a previous study, students diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) were divided into three groups, mild, moderate, or severe, based on the results of the Conners Behavior Rating Scale. Comparisons between pre- and post-hospitalization educational placements were made in order to determine if the effect of psychiatric hospitalization was a more restrictive educational placement for the ADHD students.

Student subjects were described by age, sex, I.Q., and reading level, as well as by their psychiatric discharge diagnosis and placement on medication. Results of this study indicated that for the mild and moderate ADHD groups, psychiatric hospitalization resulted in either a more restrictive educational placement or an increase in GED, vocational rehabilitation, private school programs, or school drop-outs. For the severe ADHD group, none of the students returned to either regular or special education classes; all the students were enrolled in GED, vocational rehabilitation, private school programs, or had dropped out of school.

The variables reading level and severity of the Conners Rating Scale were associated with discharge placement, while I.Q. and gender were not related. The drop-out rate was consistent with the special education drop-out rate which has been previously reported in the literature.

Results indicated that for this group of ADHD students, psychiatric hospitalization resulted in either more restrictive educational

placements or in withdrawal from public schools, including dropping-out. Legal precedents relating to the use of independent evaluations following a student's discharge from a private facility, as well as a comprehensive review of the history and etiology of ADHD are reviewed and discussed with the results. Implications for further research are also presented.

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CHAPTER 1

Introduction

Attention Deficit Hyperactivity Disorder is the term proposed by the American Psychiatric Association, in their revised third edition of the Diagnostic and Statistical Manual of Mental Disorders-Revised (DSM-111-R, 1987), for conditions previously referred to as Attention Deficit Disorder with Hyperactivity (ADHD), Hyperkinesis, or Minimal Brain Dysfunction. In general, the essential features are developmentally inappropriate degrees of inattention, impulsiveness, and hyperactivity.

Attention Deficit Hyperactivity Disorders (ADHD or ADD) have been demonstrated to be the most common psychiatric problem among pre-pubertal and adolescent children. It is likely, therefore, that ADHD children may represent the most prevalent psychiatric disability in the public school classroom; estimates range from 23% to 50% depending on the criteria used (Cantwell, 1975). It is noted in DSM-111-R, that this disorder is common, and a conservative estimate of 3% prevalence among school-age children is indicated (APA, 1980, p. 51). Since many of the children and adolescents with ADHD are evaluated through either out-patient clinics or in-patients hospitalization, school personnel must have a working knowledge of psychiatric nomenclature in order to utilize independent evaluations during the eligibility process. Little is known about the impact of psychiatric

hospitalization on educational placement for this group of children and adolescents or on what variables predict a more positive educational outcome.

Etiology of the ADHD Diagnosis

The inability of ADHD children to sustain their attention and concentration to task relevant stimuli is a common impediment to classroom learning. The treatment and treatment outcomes of hyperactive children have drawn considerable attention because children with ADHD are at risk for significant social, educational, and psychiatric disabilities (Ackerman, Dykman, & Peters, 1977; Barkley, 1990; Hechtman & Weiss, 1983; Mendelson, Johnson, & Stewart, 1971; Minde, Weiss, & Mendelson, 1972). These disabilities may include school failure, learning disabilities, language/communication disorders, vocational difficulties, interpersonal maladjustment, and alcohol and substance abuse (Barkley, 1990; Pelham & Bender, 1982). In addition, a hyperactive behavioral history is frequently reported among anti-social adults (Satterfield & Cantwell, 1975).

The description and labeling of children with hyperactivity has an interesting evolution. Stewart (1970) quotes a German rhyme, written in 1845 by Heinrich Hoffman, describing a hyperactive child: "Fidgety Phil, he won't sit still, he wiggles, he giggles, the naughty restless child, grows still more rude and wild."

In the early 1900s, hyperactive behavior was strongly linked to brain damage (Martin, Welsh, McKay, & Bareuther, 1984), and terms such as Brain Damage Syndrome, and Minimal Brain Damage were attached to hyperactive children. In the 1960s this was challenged by pediatric

child neurologists. It was suggested that brain damage should not be inferred from behavioral signs alone and the term Minimal Brain Dysfunction (MBD) was suggested to describe this population. Although brain damage is known to be present in some children with ADHD, only 5 to 15% have hard evidence of neuropathology (Adams, 1983; Martin et al., 1984). On the other hand, neurological "soft signs" are quite common in hyperactive children and they have been shown to be predictive of a better response to methylphenidate treatment (Ritalin), one of the most common types of medical intervention (Martin et al., 1984). Neurological soft signs have been shown to be associated with children exhibiting psychiatric difficulties (Martin et al., 1984). These "soft" signs have been demonstrated as being more common in hyperactive children than in neurotic and normal children (Werry, Methven, & Fitzpatrick, 1983). "Soft" signs are also believed to take on added significance once the child reaches the age of eight (Adams, 1983). They include clumsiness, awkward gait, difficulty with rapid alternating movements, finger agnosia, ocular apraxia, decreased graphesthesia, and increased adventitious choreiform movements of the outstretched hands (Adams, 1983). The clumsiness, awkwardness, and poor ball playing evidenced by the continued presence of these behaviors after age seven and-a-half are considered to be developmentally inappropriate (Adams, 1983).

The purpose of a neurological examination is to identify a child with organic brain disease who requires further diagnostic evaluation and/or therapy and to eliminate the possibility of a slowly progressive organic disease requiring immediate intervention (Adams, 1983). An electroencephalogram (EEG) is a helpful diagnostic tool, although there

is no specific pattern with ADHD (Adams, 1983). About 35% to 50% of children diagnosed as ADHD have abnormal EEGs as compared with at least 15% of the general population (Bradley, 1973). The purpose of the EEG, therefore, is mainly to identify focal lesions and to help diagnose paroxysmal disorders such as petit mal or a localized seizure focus (Adams, 1983).

The MBD diagnosis was unsatisfactory because of the lack of specificity of criteria for application of the label, as well as the inherent implication of neuropathology. The American Psychiatric Association's DSM-111-R identifies criteria that focus on the behavioral manifestations of the disorder, not the etiology. Although specific criteria are identified for inattention, impulsiveness, and hyperactive behavior, some researchers argue that there are really no standards for developmentally inappropriate degrees of these behaviors. As a result, controversy regarding the diagnosis of ADHD still exists. Restlessness and overactivity are common in normal children, especially in boys between 6 and 12 years of age. Some children are never referred for hyperactive behavior because they have parents who are tolerant of their behavior, teachers who do not perceive their behavior as a problem, and/or optimal environments in which structure for their behavior is provided. Conversely, there are essentially normal but active children who are referred for evaluation because of less tolerant individuals in their environments. Academic underachievement is found in most children with this disorder. Other symptoms that also occur are low self-esteem, mood lability, low tolerance for frustration, and temper outbursts. The disorder becomes most evident when children reach school-age and have

difficulties meeting the demands of the classroom. Overactivity, however, is a major part of the syndrome in early childhood. The syndrome is more common in boys than in girls, with some estimates of the boy-girl ratio as high as 9:1 (Campbell, 1976). It is stated in the DSM-III-R that, in approximately half the cases, onset of the disorder is before age four. However, the disorder is often not recognized until the child enters school.

Use of a valid and reliable rating scale, such as the Conners Parent Rating Scale Revised (CPRS-R), and/or the Conners Hyperkinesia Index (Goyette, Conners & Ulrich, 1978), can be of assistance in making the diagnosis. Even with all of the diagnostic complications, there is still a high degree of agreement among experienced clinicians in diagnosing this disorder (Werry et al., 1983).

Further complicating the diagnostic issue is the hypothesized correlation between conduct disorders and ADHD. Some researchers believe that conduct disorders are precursors of ADHD, while others believe the reverse to be the case. In either case, there appears to be little disagreement that there is a relationship between these two disorders. There is also speculation as to the role of depression and substance abuse with the ADHD diagnosis.

ADHD and Psychiatric Hospitalization

Although psychiatric hospitalization has been seen by some researchers as an essential step on the continuum of services for behaviorally disordered children and adolescents (Gossett, Lewis, Lewis, & Phillips, 1973; Grosenick & Huntze, 1980), there has apparently been little attempt to integrate service delivery between psychiatric

agencies and public schools. Integrating services is somewhat less problematic when psychiatric treatment is delivered through outpatient clinics or ongoing school consultation (Berkovitz, 1980; Kellam, Branch, Agrawal, & Ensminger, 1975; Nichol, 1974). The question of re-entry of hospitalized patients into public school programs, however, has received renewed interest (Ferdinande & Colligan, 1980; Lira & White, 1978). Although some attention has been focused on school variables related to successful outcome of psychiatric hospitalization or residential treatment (Abidin & Seltzer, 1981; Forness & Barnes, 1981; Forness, Cronin, & Lewis, 1981), there remain rather serious unresolved issues in terms of interagency communication and responsibility. For example, the psychiatric hospital's responsibility for public school liaison activity is not at all clear (Forness, 1982), the diagnostic classification schemes of psychiatric and special education seem largely unrelated to one another (Forness & Barnes, 1981; Forness & Cantwell, 1982), and very few referrals for hospital or clinic services seem to originate in the schools (Forness, Urbano, Rotberg, Bender, Gardner, Lynch, & Zemanek, 1980).

ADHD and Independent Evaluations

What happens to these children once they return to public education is not clear. There is some evidence to suggest that if the psychiatric hospital provides consultation services during the course of the student's hospitalization, integration of evaluations and other information obtained during hospitalization are better utilized in determining the appropriateness of special education or other services (Berkovitz, 1980; Kellam, et al., 1975; Nichol, 1974). Martin (1980) stated that,

previously, if a parent was dissatisfied with the public school's evaluation and sought an independent diagnosis, the school typically would not respond, treating the outside diagnosis as predictably biased in the parent's favor.

However, even though the information may be difficult to integrate, it is clearly in violation of the Individuals with Disabilities Education Act (PL 101-476) to ignore the independent psychiatric evaluations which "must be considered by the public agency in any decision made with respect to the provision of a free appropriate public education to the child" {34 CFR 300.503(C)(1)}. The school is within its rights in deciding to do its own evaluation as part of the assessment procedure, in addition to the independent evaluation. No matter what course the public school follows, they have an "affirmative duty" to identify, evaluate, and place the student if he/she is identified as eligible for special education services, even if the decision is to place the child back into regular classes. This means that a school acting in "good faith" would review all independent evaluations received whether or not the child had been previously referred to the Eligibility Determination Committee (EDC).

Although it is widely accepted that 19-26% of ADHD children have at least one co-existing learning disabilities (Barkley, 1990; Bryan, 1974), it is unclear whether or not ADHD in and of itself is a specific learning disability identified or served within the special education classification schema. Part of the difficulty lies in the diagnostic and classification schema of the DSM-111-R and federal statues which are largely unrelated to one another (Forness & Barnes, 1981; Forness &

Cantwell, 1982). The EDC has the main responsibility for determining what special education services, if any, are appropriate for a hyperactive child. Since children with ADHD have been identified as the most common psychiatric disorder to be served by the public school, and since some type of out-patient care or psychiatric hospitalization is almost always involved for behaviorally disordered students (Gossett et al., 1973; Grosenick & Huntze, 1980), the importance of school and mental health professionals working together seems indisputable. This point is further illustrated from the data by the House Select Committee on Children, Youth, and Families, which indicated that admission to inpatient psychiatric hospitals for children under 18 more than doubled between 1970 and 1980. Between 1980 and 1984, adolescent admissions to private psychiatric hospitals increased more than 350% from 10,765 to 48,375 (Newsweek, 1986).

Psychiatric Hospitalization and Educational Placement

Forness, Barnes, and Mordaunt (1983) conducted a study looking at the "diagnostic role" of a psychiatric hospital within the educational system. This study specifically addressed whether or not psychiatric hospitalization led to changes in classroom placement, and what variables were related to changes in placement. Following their study of the "diagnostic role" of a psychiatric hospital within the educational system, Forness et al. (1983) concluded that children or adolescents indeed change their diagnostic classification in the schools following hospitalization. Some three out of five or 60% of the students changed designations; and in nearly every case, the change was from a less restrictive to a more restrictive placement. The change in placement

did not appear to vary by intelligence or by the severity of the behavioral problem. The initial conclusion was that admission to a psychiatric facility leads to lower levels of classroom functioning. There is no doubt that psychiatric hospitalization brings students to the attention of special educators. Although some two-thirds or 67% entered the hospital from regular classes without special assistance, only one-fifth (20%) returned to such situations. A great many students appeared to require self-contained classrooms after discharge. Some adolescents in particular needed residential school placement. The follow-up data tended to show that public school teachers nonetheless judged these students as relatively well-placed in their post-discharge classrooms, at least compared to their regular or special classmates against whom they were judged. Whether special education placement is actually required, or whether the stigma of psychiatric hospitalization leads to lower expectations or seemingly self-fulfilling prophecies, is not known to have received attention in the literature.

Statement of the Problem

One way to address the problem is to examine the effect of psychiatric hospitalization on the educational placement of the ADHD students following their re-entry into the public school programs, and to evaluate certain variables which may relate to placement. Since the literature in this area is limited, these issues will be addressed by posing the following research questions based on a modification of a similar study by Forness et al. (1983).

1. Of those students who entered with a prior special education placement, are there changes in the category of placement upon their discharge?

2. What changes in placement, if any, occur with students that have not previously been identified as in need of special education?
3. Are there selected variables such as gender, IQ, reading achievement scores and severity of the ADHD condition that are associated with post-hospitalization placement?

Outline of the Study

Chapter 2 contains a detailed literature review of ADHD and its diagnostic relationship to conduct disorder, depression, and speech and language learning disabilities. The condition called ADHD has been singled out due to the documented representation in both psychiatric facilities and public schools as the most common condition affecting school-age children.

Chapter 3 contains a description of the research methods that were employed in this study. It also contains a description of the subjects included in this study and proposed statistics. Tables are included to summarize and describe information. Appendices further support information provided in the chapter.

In Chapter 4 the data are summarized and the research questions are addressed separately. Tables and figures are also provided.

The conclusions of this study, based on its results, are summarized and discussed in Chapter 5. Questions for further evaluation and study are posed.

Limitations and Delimitations

The study was conducted in a private psychiatric facility in Gadsden, Alabama during the period of June to October 1988. This

facility, Mountain View Baptist Hospital, was an intermediate care facility for adolescents with psychiatric problems. The hospital had a 48-bed capacity. Referrals were made by agencies, as well as by parents and/or guardians. Admission was paid by insurance, with no private billing for anything not covered by insurance. The hospital also admitted 10% indigent; however, at any given time, as many as 25% of the students were without insurance. There were proportionately fewer African-American referrals made than Caucasian referrals.

The review of the literature was difficult to interpret due to the publication of the DSM-III-R in July of 1987. Prior to that time, the psychiatric community used the DSM-III published in 1980. Therefore, most of the research found during the literature review reflects DSM-III criteria.

In addition, the U.S. Department of Education issued a Policy Memorandum on September 16, 1991 stating that children with ADD are eligible for special education and other related services when (i) the ADD impairs educational performance or learning, under both P.L. 101-476, Individuals with Disabilities Education Act (IDEA) Part B "other health impaired" statutes and regulations; and (ii) Section 504 of the 1973 Rehabilitation Act plus its implementing regulations. The policy resulted from the Department ADD Notice of Inquiry completed in 1991 pursuant to a 1990 Congressional mandate that the department gather all relevant information about how children with ADD are educated in public school. Thus, ADD was not recognized as a separate handicapping disorder nor as a specific learning disability. The implications of this policy will be addressed in Chapter 5 under conclusions as it relates to the results of this study.

CHAPTER 2

Literature Review

In Chapter 1 the definition, prevalence, and outcome of children diagnosed as ADHD were discussed. The historical etiology of the term ADHD was reviewed and neurological complications were presented. As noted, diagnostic criteria between the public school and psychiatric personnel have little in common (Barnes & Forness, 1981; Forness & Cantwell, 1982). The purpose of this chapter is first, to review the public school's responsibility to a student when he or she returns to school with an independent evaluation following psychiatric hospitalization or out-patient treatment; and second, to compare and contrast special education nomenclature and eligibility criteria with that of psychiatry. Legal precedents are also included. A literature review of ADHD, as it pertains to special education diagnostic nomenclature and eligibility criteria comprises the third portion of this chapter's purpose.

Since ADHD children represent the largest psychiatric population in the public school, then the director or supervisor of special education who chairs the EDC must have a working knowledge of this disorder as well as an understanding of psychiatric nomenclature. The 1980 census indicates that there are 35 million school-age children between the ages of 5 and 14 years. Therefore, it is possible that there are as many as one million school-age children with ADHD and many more individuals with residual problems as adolescents and adults. Psychiatric and/or

out-patient evaluations are often an adjunct to treatment of ADHD children and it is legally mandated that these evaluations be considered during the EDC process (Reed, 1980). In addition to understanding the differences in etiology and terminology, a general familiarity with the diagnostic approaches is necessary for integrating the various pieces of information.

Independent Evaluations

In the past, unless school personnel actually made the recommendation for placement outside the public school, public school personnel at times appeared to act as if they were no longer under any legal obligation to that student. Under such perceptions, parents who voluntarily placed their children in residential psychiatric facilities such as Mountain View Baptist Hospital and School (MVBHS) found that the public school no longer considered the student its obligation. Often, when the student returned to the public school, any independent evaluation(s) that had not been specifically requested by the school were treated as biased in the parents' favor and discounted (Reed, 1980). However, P.L. 101-476 clearly gave the responsibility to the schools to identify and assess children who have a right to special education and related services, including "children in all public and private agencies and institutions in the state," as well as those totally unserved (34 CFR 300.401). This is an affirmative responsibility given to the public schools, even if the recommendation is to return the child or adolescent to the regular classroom. "A school's failure of referral," according to Reed (1980), "can be just as wrong as the expedient assessment of a handicap, as indicated in the case of *Pierce V. Board of Education*:"

From 1971 to February, 1974 the plaintiff attended the F.W. Riley School in the city of Chicago. During that time the minor-plaintiff was discovered to be suffering from a specific learning disability . . . {T}he defendant was advised of this fact by the minor-plaintiff's parents and various of the plaintiff's privately retained physicians, who recommended that the boy be transferred from the regular or normal classes of instruction to classes known as special classes or learning disability classes. Nevertheless, the defendant failed and refused to either transfer the minor to these classes or undertake their own testing and evaluation of the boy. As a result of the defendant's failure to comply with their statutory duties, the plaintiff remained in regular classes at the F.W. Riley School from 1971 to 1974, where he was required to compete with students not suffering from a learning disability and as a result sustained severe and permanent emotional and psychic injury requiring hospitalization and medical treatment. {358 N.E. 2d 67 (Ill. App. 1976)}

The Illinois Appellate Court found that the school does have a duty to identify those in need of special services. Doing nothing, the Court said, would be an intentional breach of the school board's duty and could make school board members liable for any damages shown.

Eligibility Criteria

Specific Learning Disabilities: Federal Definition

Balancing the wrongful deprivation of constitutionally protected interests, and determining failure to meet the affirmative standard for identification under P.L. 101-476, can occur by following the guidelines provided within the eligibility criteria (Reed, 1980).

The Federal definition of specific learning disability reads:

. . . a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation,

of emotional disturbance, or of environmental, cultural, or economic disadvantage {34 CFR 300.5(6)(9)}.

Thus, if it is accepted that ADHD and MBD are interchangeable terms for the same condition, then all children identified as ADHD could potentially be eligible to receive special education services from the specific learning disabilities program. On the other hand, if ADHD and conduct disorders are related to each other, ADHD children may be excluded from receiving services due to the existence of an emotional disturbance.

Specific Learning Disabilities: Alabama Special Education Policy Manual

Each state has been charged by Federal mandates to spell out in their annual plan their procedures for identification and evaluation of children with disabilities. These include guidelines of the definitions for handicapping conditions found in the Federal regulation 34 CFR 300.5. Every local school district that performs assessments must also have guidelines that control the eligibility criteria and evaluation procedures.

According to the Special Education Policy Manual, Bulletin No. 36, 1986, Alabama has modified the Federal definition of specific learning disabilities to read:

. . . a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, write, spell, or do mathematical calculations.

Students with specific learning disabilities will demonstrate a severe discrepancy between intellectual ability and achievement in one of the following areas: basic reading skills, reading comprehension, mathematical calculation, mathematical reasoning, oral expression, listening comprehension, or written expression (p. 22).

The Alabama definition of specific learning disabilities, therefore, appears not to automatically include those students identified as ADHD, unless specific learning disabilities are confirmed. Specific learning disabilities are determined by documenting the existence of a "severe discrepancy" between achievement and intellectual ability.

The "severe discrepancy" issue is currently widely debated within the learning disabilities community and is beyond the scope of this paper; however, it is important to note that the state of Alabama uses a standard score comparison model for identifying "severe discrepancy." The standard score discrepancy model has been observed as an inadequate model when used alone, since it does not take into account the effect of regression on I.Q. and may over-identify children or adolescents as having a specific learning disability. For example, the expected achievement of a child with an I.Q. of 130 is not 130, but is 120-121, while the reverse is true for the lower I.Q.'s. The Alabama State Policy Manual explains the severe discrepancy between intellectual ability and achievement in this way:

Students with specific learning disabilities usually exhibit a severe discrepancy between intellectual ability and achievement/diagnostic test standard scores. The standard score on the individual achievement/diagnostic test(s) must be at least one standard deviation unit below the student's intelligence quotient if the student is seven (7) through ten (10) years of age, and must be at least one and a half standard deviation units below the student's quotient if the student is eleven years of age or older. This documentation must be included in a written report of the multidisciplinary team (p. 24).

Transformation tables are provided, and although the policy manual states that "no single criterion nor specific number of characteristics can be used alone in identifying students with specific learning

disabilities" (pp. 22-23), it is necessary to document the existence of a "severe discrepancy" for placement.

With regard to intellectual functioning, the Alabama state policy manual assumes average to above average intellectual ability stating "scores should typically be no more than one standard deviation below the mean on a valid, individually administered measure of intellectual functioning" (p. 23). Therefore, a full-scale I.Q. of 85 is assumed on the Wechsler Intelligence Scale for Children-Revised WISC-R (Wechsler, 1974) and a full-scale I.Q. of 84 on the Wechsler Adult Intelligence Scale-Revised, WAIS-R (Wechsler, 1981) for placement. For those children exhibiting significant differences on verbal and performance I.Q.'s (more than 12 points), intellectual ability, or lack thereof, may not be accurately reflected in the full-scale I.Q. One researcher states that it is typical for the verbal I.Q. to be 15-20 points above the performance I.Q. for most learning disabled children (Adams, 1983). Other measures or procedures to measure cognitive abilities are allowed in these cases, with appropriate documentation, but more specific procedures are not detailed in the manual.

Specific Developmental Disorders: DSM-111-R

In DSM-111-R language, specific learning disabilities are called specific developmental disorders. The specific developmental disorders that are available for diagnosing include: developmental arithmetic disorder (which includes linguistic, perceptual, attention, and mathematical skills that impair the development of arithmetic skills); developmental expressive writing disorder; and, developmental reading disorder (lack of word recognition skills and comprehension). Under the

heading of language and speech disorders are: developmental articulation disorder; developmental expressive language disorder; and, developmental receptive language disorder (the essential feature here is impaired comprehension). Listed as motor skill disorders are: developmental coordination disorder; and, specific developmental disorder, not otherwise specified.

There is no documented correlation between these diagnoses and the diagnosis of any specific learning disability, although face validity implies similarities. Specific developmental disorders are characterized by inadequate development of specific academic, language, speech, and motor skills that are not due to demonstrated physical or neurological disorders, a pervasive developmental disorder, mental retardation, or deficient educational opportunities. It should be noted that a diagnosis of mental retardation does not preclude the additional diagnosis of specific developmental disorder. For example, a child with an IQ of 60 should, with adequate schooling, be able to read simple materials. If the child's ability to read is markedly below that which would be expected given an I.Q. of 60, both mental retardation and developmental reading disorder should be diagnosed.

The diagnosis of a specific developmental disorder is made with the aid of standardized, individually administered tests that measure both the level of development of the impaired skill and the person's intellectual capacity. In diagnosing developmental expressive and receptive language disorders, it is necessary to compare scores obtained from standardized measures of nonverbal intellectual capacity.

When a child has more than one specific developmental disorder, they should all be diagnosed.

The inclusion of these categories in a classification of 'mental disorders' is controversial, since many of the children with these disorders have no other signs of psychopathology. Further, the detection and treatment of many of these disorders usually take place within schools rather than the mental health system. However, these conditions are strongly associated with Axis I disorders and conform to the DSM-111-R concept of mental disorder (DSM-111-R, p. 40).

It is also noted that a common complication of developmental expressive or receptive language disorder is an academic skill disorder. A common complication of an academic skill disorder is conduct disorder (DSM-111-R, p. 41).

Although the DSM-111-R does not use the term "severe discrepancy," diagnosing a specific developmental disorders does require that skills, which are measured by standardized, individually administered tests, fall markedly below the expected level given the person's schooling and intellectual ability as determined by an individually administered I.Q. test.

There is no minimum I.Q. to diagnose specific developmental disorders; however, individuals with general delays in development would receive a diagnosis of mental retardation not a specific developmental disability. These diagnoses are coded on Axis 11, one of the five "axes" used for evaluation of psychiatric disorders. Also coded on Axis 11 are personality disorders; ADHD is coded on this axis as well. The ADHD disorder is noted as mild, moderate, or severe. Axis 1 has all clinical syndromes, including conduct disorders and depression. Axis 111 lists physical disorders and conditions that are potentially relevant to the understanding or management of the case; Axis IV notes the individual's current level of functioning; and Axis V lists the individual's highest level of functioning during the past year. Each

individual is given a five axis diagnosis at the time of an evaluation or discharge from a psychiatric facility. In many cases, the complete multiaxial diagnosis is found only on the discharge summary. Therefore, it could be facilitatory for the director or supervisor of special education to request a discharge summary, in addition to the results of the independent evaluation. For example, the person requesting the educational component of a student's evaluation during hospitalization may only note that there was no evidence of any specific developmental disorders, or may diagnose mental retardation. The psychological component, however, may have a diagnosis of schizophrenia. The most appropriate placement is based on the understanding and integration of all these various components. Even if the school decides to proceed with its own evaluation, the information included in these components must legally be considered. Completion of these various evaluations is standard operating procedure in most facilities that are accredited by the Joint Commission on the Accreditation of Hospitals (JCAH), the licensing agency available to psychiatric facilities.

Attention Deficit Hyperactivity Disorder

Specific Learning Disability

Many researchers believe that ADHD children have one or more learning disabilities that interfere with their academic and social activities.

Bohline (1985) demonstrated that children given the diagnostic label of ADHD were inferior to the normal population relative to general intelligence. According to his proposition, though often described as

hyperactive, it is the cognitive impairments of these children, not heightened motor activity, which interferes with satisfactory rates of learning. In Bohline's study of 120 subjects age 6-11, he found that although ADHD children were inferior in global intelligence compared to normals, the ADHD group were not intellectually distinct from the other learning disabled children. However, other researchers state that ADHD children are likely to be behind both normal children and their own siblings in their intellectual development scoring an average of 7 to 15 points below both control groups on standardized intelligence tests (Barkley, 1990). It is not clear whether these differences in scores represent real differences or just differences in test-taking behavior (Barkley, 1990). Bohline (1985) stated that ADHD children have a more difficult time learning when the situation is group-oriented because the overt symptoms of ADHD are most evident. Therefore, it is not clear if the ADHD students have lower intelligence scores due to their inability to learn in group situations and/or if their learning disabilities are impairing their intellectual ability and/or if it is their test-taking behavior. Regardless of the reason, Bohline (1985) recommended placement in individualized remedial classrooms to address the educational problems of these students.

Loney, Kramer, and Milich (1981) and Laufer (1986) have also postulated that as many as 76% of ADHD children will also require special education. Martin et al. (1984) stated that the hyperactive child ideally requires a self-contained classroom where extraneous distractions and excessive stimulation are kept to a minimum. Academic tasks and teacher expectations must take into account the child's short attention span. However, Adams (1983) suggested that children who are

affected only minimally can function in a regular classroom if special tutoring is available.

Gittelman et al. (1985) stated that 8% of all adolescent males, not previously diagnosed as ADHD before the age of nine, may later meet the diagnostic criteria. She hypothesized that the difference between those identified in preadolescence versus those with a negative history for ADHD was the persistence of the symptoms. It could also be that these previously "normal" adolescents went through periods of anti-social behavior coupled with disorganization that presented as restlessness, inattentiveness, and impulsiveness. Because they are not stable, and because they are not associated with later dysfunction, ADHD-like symptoms in previously normal adolescents do not appear to be clinically significant. This later development of ADHD symptomatology has been referred to as "secondary or reactive ADHD" by some current researchers in the field (Bohline, 1985; Levine, 1988).

Conduct Disorder

Some researchers postulate that ADHD is better conceived of as a variant of conduct disorders (Quay, 1979; Sandberg, Rutter, & Taylor, 1978; Stewart & de Blois, 1981); on the other hand, several investigators contend that anti-social children are a sub-group of those with hyperactivity (Cantwell, 1978).

A number of investigators have reported on the long-term adjustment of hyperactive children following diagnosis (Ackerman et al., 1977; Barkley, 1990; Blouin, Bornstein, & Trites, 1978; Borland & Heckman, 1976; Hechtman, Weiss, & Perlman, 1984; Howell & Huesy, 1981; Laufer, 1971; Loney, et al., 1981; Loney, Whaley-Klahn, Kosier, & Conboy, 1983; Mendelson et al., 1971; Menkes & Rowe, 1967; Minde et al., 1972;

Satterfield, Hoppe, & Schell, 1982; Stewart, Mendelson, & Johnson, 1963; Weiss, Hechtman, Perlman, Hopkins, & Werner, 1979). Very few of these studies are prospective in nature. Reliance on retrospective childhood diagnoses is problematic and makes replication difficult, as the information available from clinical chart summaries varies across patients as well as across treatment centers. Unless one is identifying clear-cut behaviors, such as court referrals for anti-social behavior, or low I.Q., it is difficult to have confidence in the accuracy of the original diagnosis. Likewise, few researchers note whether or not the diagnosis used is the admission or discharge diagnosis; nor do they note other diagnoses that might clarify the primary condition. Therefore, the childhood psychiatric status of cases studied retrospectively is open to question.

Conversely, with the exception of Hechtman and Weiss (1986), Gittelman et al., (1985), and Barkley (1990) cases have been evaluated with full knowledge of their earlier diagnostic status. The degree to which this may have possibly biased judgments during later assessments cannot be determined. Another limiting factor in the published literature is that many studies have had a large population of drop-outs. Edgar (1987) stated that of those students enrolled in secondary special education programs, over 30% drop-out, while Barkley (1990) estimates a 35% drop-out rate for ADHD students. A recent study in the state of Alabama showed that there had been a total of 1,118 drop-outs in special education from 1984-1989 in 21% of the systems that responded to the survey (Fletcher, 1989). Since the cost of placing a student in special education in Alabama ranges from \$1,800.00 for the educable mentally retarded to \$5,000.00 for deaf or blind students, this

represents a substantial investment of the tax payers' money; yet it is considered a wise investment if the "at risk" student remains in school until graduation. The economic impact of drop-outs is dramatic with Fletcher (1989) estimating that the total educational loss to the state of Alabama may have exceeded 10 million during the years of 1984-1989 alone for special education drop-outs. Yates (1987) stated that at the cost of incarcerating a criminal for 10 years, society could afford to send him/her through Harvard/Yale, provide a new car, and still come out ahead. Nationally, Larsen and Shertzer (1987) projected the cost of lost tax revenues for drop-outs between the ages of 25-34 at \$71 billion, welfare and unemployment costs at \$3 billion, crime and crime prevention at \$3 billion. Larsen and Shertzer (1987) further estimate that for each dollar invested in a students' education, six dollars would be generated back into the economy. Therefore, the retrospective status of these cases as well as the drop-out rate has complicated the study of ADHD students.

Furthermore, in several instances, the age of follow-up is 13:0 or 14:0 years (Ackerman et al, 1977; Blouin et al., 1978; Loney et al., 1981; Mendelson, et al.; Minde et al., 1972). As the vast majority of ADHD children are referred during elementary school years, the modal age being about 9:0 years old, status at age 13:0 years does not provide information relevant to outcome much beyond the peak of the age-risk period for diagnosis.

In an early retrospective study of 14 subjects, a grim picture of the outcome of ADHD children was presented. Many were eventually institutionalized (Menkes & Rowe, 1967). In addition, 30% had been in trouble with the police; however, none had been in jail, and none

reported any habitual drug usage. Mendelson et al. (1971) reported that 59% of their subjects had contact with the police, close to 20% had appeared in juvenile court, and over 70% of the mothers reported that their child was more active, restless, and impulsive than normal peers. In addition, academic failure (58% failing one or more grades), and depression (nearly 50% having low moods and poor self-image) were common. Similar results were reported by Borland and Heckman (1976), who compared cases, diagnosed retrospectively, with their siblings.

Ackerman et al. (1977) reported a 4-year follow-up of learning disabled children initially diagnosed as hyperactive, hypoactive, and "normoactive." At follow-up, the hyperactive learning disabled group was more impulsive, fidgety, and over talkative than the other groups, and had more conduct problems.

Loney et al. (1981) have related a number of early characteristics of hyperactivity to outcome in adolescence, but the nature of the outcome itself is not detailed. In a further report (Loney et al., 1983), a subgroup of the hyperactive children had significantly more antisocial disorders in adulthood than their brothers. However, their respective rates of alcoholism did not differ. Barkley (1990) states that the most important predictor of adult outcome is the degree of childhood conduct problems, especially lying and stealing.

Howell and Huessy (1981) obtained teacher ratings of 102 rural second-grade children and re-evaluated them yearly throughout high school. Hyperactive children, those who fell above the 80th percentile on hyperactivity scores in any one school year between grades 2 to 8, had significantly worse academic performance in the 12th grade. Direct interviews indicated that the identified cases had completed less

impaired functionally. As adults (range = 21:0 to 33:0, \bar{x} = 25) the ADHD group had more antisocial personality disorders (23%) than their controls (2%) but did not have an excess of drug and alcohol abuse (Hechtman & Weiss, 1986).

Loney and Milich (1982) reported that 65% of the children who met the criteria for ADHD also had problems with aggression. Evaluating a different clinical sample, and using different diagnostic procedures, Stewart et al. (1981) found that two-thirds of the ADHD group were also diagnosed as having an aggressive conduct disorder, while three out of four of those with an aggressive conduct disorder were also hyperactive. The substantial but less than perfect overlap between hyperactivity and aggression is important not only for diagnostic purposes, but also because of the prognostic significance of childhood aggression. It has now been well documented that childhood aggression is a stable behavior pattern and a prime predictor of later aggression and antisocial behavior, as well as adult psychopathology and social failure in a more pervasive sense (Barkley, 1990). In the case of educational outcomes, Lambert (1988) states that either the severity of the symptoms of aggression or ADHD affect later educational status as well.

The findings of Gittelman et al. (1985) are not inconsistent with the view that ADHD is a variant of conduct disorders. Their results indicated a marked reduction in functional problems for hyperactive children between the ages 13:0 to 18:0 years. It is possible, and certainly to be hoped, that their adult status continues to be ameliorated as time passes, so that the relative difference between them and the "normal" population is further diminished. However, Weiss, Hechtman and Perlman (1978), the only investigators to have conducted a

prospective study (besides Satterfield et al., 1982) of hyperactive children into adulthood, have found that there is marked increase of antisocial personality disorders in the adults who were hyperactive children. In addition, ADHD children were more likely to have the additional diagnosis of a substance abuse disorder. In all cases, the onset of conduct disorders was reported to have preceded or coincided with the onset of substance abuse disorders. There was not a single case for whom a substance abuse disorder anteceded the development of a conduct disorder. Gittelman and her colleagues believe that the greatest risk factor for the development of antisocial behavior and drug abuse is the maintenance of ADHD symptoms. The results supported the expectation that the late adolescent psychiatric status of these youngsters is significantly worse than nonhyperactive children. The most striking finding was the degree to which the syndrome consisting of impulsivity, inattention, and hyperactivity persisted in about one-third of the cases. It had been previously believed that attentional problems remained while the others disappear or become attenuated.

The search for stable predictors of outcome is optimized by the unfortunate fact that a relatively large number of ADHD children develop and maintain conduct disorders. Gittelman et al. (1985) found that if the original symptoms of hyperactivity had not remitted, the chances of developing a conduct disorder were almost four-fold greater than if the childhood condition were no longer present. Thus, hyperactive children who retained the ADHD symptoms had a 50-50 chance of having a conduct disorder in late adolescence or early adulthood. In turn, almost two-thirds (59%) of the youngsters with conduct disorders progressed to drug or alcohol abuse. Barkley (1990) found that 25% or more of conduct

disordered youths, later developed anti-social personality disorders that involve delinquent/illegal behaviors.

Lambert, Hartsough, Sassone, and Sandoval (1987) used a subsample of hyperactive and control boys matched for socioeconomic status and age. These authors reported that among those who were hyperactive as children, 20% were asymptomatic during early adolescence, 37% continued to have problems but were no longer hyperactive, and 43% continued to be hyperactive and receive medical treatment. This study also added to the knowledge about the social and mental health risks faced by hyperactive children during the elementary school years for particular educational, mental health, and social outcomes. By age 14:0 years, 19% of the subsample of hyperactive boys, as opposed to 3% of the controls, had had trouble with law enforcement agencies, 14% of the hyperactive subjects compared with 2% of the controls had been suspended from school more than once, and 5% of the hyperactive subjects as compared with none of the controls had been committed to a juvenile facility. In addition to conduct problems and delinquency, two hyperactive subjects had attempted suicide, one had attempted murder, five had attempted to repeatedly break in and enter households, and two had been placed in psychiatric institutions.

The findings highlight both good and bad conatations. Negatively, many male adolescents, whether they exhibited early behavior problems or not, experience adjustment problems of sufficient severity and duration to meet the criteria for a psychiatric diagnosis as currently defined; conversely, for many, the difficulties are transient. Early and middle adolescence probably represents the most problematic developmental

period for boys, and studying psychiatric disorders at that time is likely to exaggerate the ultimate risk for maladjustment. Attention deficit hyperactive disordered children more frequently attended special schools, as many as 35% did not finish high school, 80% failed to go on to college, the majority frequently left school or ran away, lived away from home in a foster care or residential setting, and were more often adjudicated delinquents (Barkley, 1990; Lambert, 1988). The gender of the ADHD subjects appears to contribute only to the specific mental health outcomes. Boys were more likely to have conduct disorders, and girls were more likely to be diagnosed with major depression.

Depressive Disorder

The view has also been advanced that disorders such as ADHD may be early forms of depressive disorders. Bohline (1985) and other researchers have found a strong relationship between ADHD and depression. For example, Staton and Brumback (1981) examined the relationship between "motor activity" and childhood depression in a group of 178 children. They found that 75% of children in the referral population who were considered ADHD also met the criteria for a depressive disorder. The authors concluded that, where evidence of neurological impairment is lacking, treatable childhood depression may be the underlying disorder associated with hyperactivity in the school setting.

In his literature review, Cantwell (1975) stated that, aside from antisocial behavior (or conduct disorders), the most significant additional symptoms of ADHD are depression and low self-esteem in as many as 80% of the cases (Barkley, 1990). Barkely (1990) also indicates that ADHD students make more suicide attempts and are more successful than their same age peers. He indicated that many authors believe this to be

a reaction to continuing failures, but others (Huessy, 1967; Malmquist, 1971) have contended that ADHD may be a depressive equivalent. According to this view, the same etiology that leads to a depressive affect in childhood is that which predisposes children to hyperactivity. These authors have argued that the favorable response of many hyperactive children to anti-depressant medication is evidence of a "depressive core" to the condition.

A recent study by Gittelman et al. (1985) refuted the finding that ADHD is an early form of depressive disorders. In fact, the diagnosed ADHD children in their study had experienced significantly less depressive disorders than their control subjects. It had been noted that conduct disorders have concurrent emotional overlays, but it is not clear whether these mixed cases would qualify for a diagnosis of a major affective disorder since most of the clinical evaluations were conducted shortly after incarceration. Soon after incarceration the likelihood of finding responses to major stress, such as dysphoric mood, somatic complaints, and other functional changes (sleeplessness, loss of appetite) is maximized. In fact, the absence of changes in affect and biologic function in the face of adversity might be considered remarkable. Lambert's (1988) prospective study noted that 37% of the subjects studied were diagnosed as depressed. Among those who reported symptoms of depression, 21% attended college, 13% failed to finish high school, and 15% reported aggressive behavior. Lambert (1988) hypothesized that depression is not documented more often due to the inaccuracy of rating scales in measuring this trait in the school setting. Adolescents who reported depressive symptoms lagged behind same age peers in cognitive development as reflected in performance on reasoning tasks, as well as

achievement and mental ability. The digit span and long-form coding tests on the Wechsler, selected as measures of attention and concentration, were also predictive of ADHD symptoms in depressed students (Lambert 1988).

Genetic Theories

Cantwell (1972), noting a higher correlation of ADHD among fathers of ADHD children, suggested a genetic contribution. He also found that in families of ADHD children there was a higher than expected prevalence of alcoholism in both parents, antisocial personality disorder in the fathers, and hysterical personality disorder in the mothers. Similarly, Morrison and Stewart (1971) and Barkley (1990) found comparably higher rates of these disorders in the parents of ADHD children. Adoption studies have revealed that parental psychopathology is higher in the biological parents of ADHD children as compared with adoptive parents.

It has been suggested that stressors to the developing fetus and neonate, although weak in comparison with other psychosocial influences, may contribute to the higher prevalence of ADHD; for example, twins, infants with low birth weights, and/or neonatal complications (Sammeroff & Chandler, 1975; Werner & Smith, 1977). The association between alcohol consumption during pregnancy and developmental disability (fetal alcohol syndrome) has been established (Jones & Smith, 1975). Some features of fetal alcohol syndrome are consistent with ADHD. In addition, drugs such as diphenylhydantoin have been implicated as having a negative effect on fetal outcome with resultant cognitive deficits (Hanson & Smith, 1975). It appears that mothers of ADHD children have higher rates of amphetamine use in pregnancy, as compared with other psychiatric diagnoses (Varley, 1984).

Waldrop and associates (1968, 1971) reported a higher-than-expected prevalence of minor physical anomalies (e.g., high arched palates and hypertelorism) in ADHD children. There was also a higher incidence of anomalies among children with the broader spectrum of children with "difficult" behavior (Quinn & Rapoport, 1974; Rapoport & Quinn, 1975). In a 1981 review, Rapoport and Ferguson concluded that biological factors are significantly operative in some children with ADHD. Their findings indicated that there are probably numerous influences which might result in ADHD, including genetic factors, toxic influences on the developing fetus, and effects of hypoxia in the neonate.

Lambert (1988) stated that low birth weight has been demonstrated to be associated with liquor, marijuana, nicotine, and hard drug use. The mothers of adolescents who had smoked more than one pack of cigarettes per day had also smoked significantly more during the ADHD subjects' gestation period. Lambert (1988) concluded that the use of chemical substances by the mother during pregnancy can predict later substance abuse in the child or adolescent.

The most predictive behavior of ADHD is frequent and serious accidents the child has during infancy and pre-school years (Lambert, 1988). This lends support to the interpretation of accidents and injuries early in life as manifestations of hyperactivity symptomatology, possibly a forerunner of later impulsivity.

The least salient predictors of educational outcome for ADHD children, contrary to popular belief, were family disruption, number of schools attended, number of family moves, and low socioeconomic status (Lambert, 1988).

Treatment/Interventions

The most common treatment for ADHD is stimulant medication including methylphenidate hydrochloride (Ritalin), dextroamphetamine (Dexedrine), and magnesium pemoline (Cylert). However, when substance abuse is suspected of either the adolescent or the parents/guardians, anti-depressants are typically prescribed instead because they have no street value. Furthermore, when psychomotor tics have been observed, stimulants are not prescribed as they can exacerbate the condition.

There is general agreement that short-term improvement in the behavior of ADHD children can be obtained with the use of psychotropic medications. Why stimulant drugs calm and organize a child's behavior has not been clarified. Although there remains a debate, Barkley (1990) believes that the stimulant drugs may be arousing central nervous system inhibitory systems thereby permitting the hyperactive child to screen out distracting stimuli and to concentrate more fully on assigned tasks. The response of ADHD is not different or "paradoxical" from normal children as Rapoport, Bushsbaum, Zahn, et al. (1978) have demonstrated. Normal children given dextroamphetamine are calmer, more organized, and have a qualitatively similar response to that of ADHD children. Lambert (1988) showed that positive parental attitudes toward treatment of hyperactivity with medical intervention was positively correlated with both improved educational performance and decreased conduct problems.

In contrast to the positive effects on short-term studies of learning and behavior, there is no documentation of a long-term positive effect of stimulant drug treatment alone (Barkley, 1977; Werry, 1970). Follow-up studies of children with ADHD often show persistent symptoms in children treated with methylphenidate for two years (Riddle &

Rapoport, 1976). Loney et al. (1981) found no difference in outcome at five years in two groups of ADHD children, one medicated, the other treated with short-term behavioral counseling. No long-term study has demonstrated that medication alone improves the adaptation of ADHD children. In fact, it has been demonstrated that peer status and academic achievement do not improve (Martin et al., 1984). Generally, recommendations have been made to discontinue treatment with the onset of adolescence, on the presumption that the organizing, calming effects of stimulant medication reverses with puberty. This hypothesis has not been proven. In contrast, studies of adolescents with ADHD demonstrate continued response to stimulant medication in a fashion similar to that of younger children, and that medication may be appropriate for adolescents that have attention and concentration problems without hyperactivity (Barkley, 1990; Zemetkin, 1991).

Summary

Thus, the literature reveals that ADHD is the most common psychiatric problem affecting school-age children. Research indicates that ADHD has a genetic contribution, and is both chronic over time and pervasive across situations. Although depression has not been shown to be a variant of ADHD, some 80% of these students have serious self-esteem issues (Barkley, 1990), and problems with depression. In addition, one-fourth of these students are also diagnosed with a co-existing conduct disorder. The behaviors resulting from these diagnoses often result in referrals to out-patient clinics and/or psychiatric hospitalization (Forness, 1983).

Research has demonstrated that 19-26% of ADHD students have learning disabilities and another 20-30% have speech and/or language

problems in addition to the behavioral manifestations of the disorder (Barkley, 1990, 1991). The deleterious effects of these disabilities with the ADHD symptomatology results in educational underachievement, failure to complete high school, persistence of learning disabilities, increased drug and alcohol abuse, and anti-social personality disorders. As Forness indicated in his 1983 study, the psychiatric hospital is often seen as an adjunct to the educational system. Therefore, the importance of the school and psychiatric hospital staff working together to determine the most appropriate educational placement can not be underestimated.

CHAPTER 3

Method

A description of the methods employed in this investigation are presented in this chapter. The following sections include information pertaining to the types of subject, research procedures, and data analyses.

Subjects

The 64 subjects included in this study were those adolescents admitted to MVBH from June through October 1988, that received a primary discharge diagnosis of ADHD following psychiatric hospitalization (refer to Appendix for description of hospital program). In addition, those students that received co-existing diagnoses of ADHD and conduct disorder, and/or major depression are described due to their previously discussed relationship with ADHD. The subjects comprised three different groups, mild, moderate, or severe, based on their score on the Conners Parent Rating Scale-Revised (CPRS-R; Goyette, Conners, & Ulrich, 1978) which was administered following admission and prior to discharge. Each item is scored on a 4-point range from 0-3, with a maximum score of 30 possible. A mean score of 1.5 is generally accepted as the lower limit for hyperactivity (Barkley, 1981). Ten items on the CPRS-R can be extrapolated to yield a Hyperkinesis Index.

Educational placement prior to hospitalization was also documented for each group. In order for the treatment team to make appropriate

discharge recommendations, each subject was administered both an individual intellectual assessment and a reading achievement test in order to evaluate for specific educational and/or learning disabilities disabilities. Many of the subjects also were evaluated to rule out specific speech/language disabilities. Where appropriate, the use and type of medication was also described for each diagnostic category.

Group I

As illustrated in Table 1, Group I consisted of 38 subjects whose score on the CPRS-R was in the mild range 1.5 - 1.9 (\bar{x} =1.67; SD=0.14). This group consisted of 17 males and 21 females. With the exception of one Afro-American female, all other subjects were Caucasian. Ages ranges from 12 to 18 years (\bar{x} =15.68; SD=1.44).

The Wechsler verbal scores ranged from 59 - 123 (\bar{x} =93.29, SD=14.45), the performance scores ranged from 55 - 124 (\bar{x} =98.13, SD=14.77), and the full scale scores ranged from 53 - 126 (\bar{x} =94.82, SD=14.87). The reading achievement level ranged from 2.0 - 12.9 grade equivalent (\bar{x} =9.36, SD=3.29).

Table 2 shows the results of the educational and speech/language evaluations, as well as the psychiatric diagnosis. The results of the educational and speech/language evaluations indicate that 52.63% (20 students) had no diagnosis or an educational diagnosis that was deferred; 7.90% (3 students) had an educational diagnosis of specific developmental disability in reading; 2.63% (1 student) had a speech/language disorder; and, 18.42% had a diagnosis of borderline intellectual ability, or mental retardation.

There were 57.89% (22) of the students that received a discharge diagnosis of ADHD and conduct disorder. Only 22.73% (5) of these

Table 1. Group I scores for age, Conners, Wechsler and Woodcock-Johnson with range, mean, and standard deviation

Scores	M/F	Age	Conners	Verbal	Wechsler Score Performance	Full Scale	Woodcock-Johnson Reading Grade Equivalent
Range	17/21	12-18	1.5-1.9	59-123	55-124	53-126	2.0-12.9
\bar{x}		15.68	1.67	93.29	98.13	94.82	9.36
SD		1.44	0.14	14.45	14.77	14.87	3.29

Table 2. Psychiatric and educational diagnoses for groups I, II, and III

Psychiatric Diagnosis	ADHD/CD	ADHD/Major Depression	ADHD/CD/Major Depression	Other
Group I (mild)	57.89% (22)	23.68% (9)	10.53% (4)	7.89% (3)
Group II (moderate)	50% (8)	18.75% (3)	6.25% (1)	25% (4)
Group III (severe)	50% (5)	0%	10% (1)	40% (4)
Educational Diagnosis	Reading	Speech/Language	Borderline/EMR	Deferred/No Diagnosis
Group I (mild)	7.90% (3)	21.05% (8)	18.42% (7)	52.63% (20)
Group II (moderate)	0%	25% (4)	6.25% (1)	68.75% (11)
Group III (severe)	0%	40% (4)	0%	60% (6)

students were discharged on medication. There were 23.68% (9) students that received a discharge diagnosis of ADHD and major depression. All of these students were discharged on medication. In 10.53% (4) cases, students received discharge diagnoses of ADHD, conduct disorder, and major depression. All of these students were also on medication at the time of discharge. Medications prescribed were generally anti-depressants and psycho-stimulants. One student in this group received a discharge diagnosis of schizophrenia, and 2 students were diagnosed with polysubstance abuse.

Table 3 shows the educational placements prior to psychiatric hospitalization as compared to the treatment team recommendations made at the time of discharge. There were 13.16% (5) students that had special education placements prior to hospitalization, 68.42% (26) were in regular education, and 18.42% (7) were in the drop-out category. Within the drop-out group, 6 students were attending private schools prior to their hospitalization.

The educational recommendations made by the treatment team were for 50% (19) to be placed in special education, 36.84% (14) to receive regular education services, and 13.16% (5) to drop-out of regular and special education programs.

Group II

As illustrated by Table 4, Group II consisted of 16 subjects whose score on the CPRS-R was in the moderate range 2.0 - 2.4 (\bar{x} =2.04; SD=0.16). This group consisted of 10 males and 6 females. All subjects were Caucasian. Ages ranged from 13 - 17 years (\bar{x} =15.50; SD=1.29).

The Wechsler verbal scores ranged from 70 - 105 (\bar{x} =89.88, SD=10.44), the performance scores ranged from 57 - 118 (\bar{x} =97.13,

Table 3. Educational placements prior to hospitalization and treatment team recommendations for discharge for groups I, II, and III

	Placement	Special	Regular	Drop-Out
Group I (mild)	Prior to Hospitalization	13.16% (5)	68.42% (26)	18.42% (7)
	Recommendations	50% (19)	36.84% (14)	13.16% (5)
Group II (moderate)	Prior to Hospitalization	6.25% (1)	81.25% (13)	12.5% (2)
	Recommendations	62.5% (10)	25% (4)	12.5% (2)
Group III (severe)	Prior to Hospitalization	30% (3)	50% (5)	20% (2)
	Recommendations	70% (7)	20% (2)	10% (1)

Table 4. Group II scores for age, Conners, Wechsler and Woodcock-Johnson with range, mean, and standard deviation

Scores	M/F	Age	Conners	Verbal	Wechsler Score Performance	Full Scale	Woodcock-Johnson Reading Grade Equivalent
Range	10/6	13-17	2.0-2.4	70-105	57-118	61-112	3.6-12.9
\bar{x}		15.50	2.04	89.88	97.13	92.44	8.50
SD		1.29	0.16	10.44	13.85	11.79	3.01

SD=13.85), and the full scale scores ranged from 61 - 112 (\bar{x} =92.44, SD=11.79). The reading achievement level ranged from 3.6 - 12.9 grade equivalent (\bar{x} =8.50, SD=3.01).

Table 2 shows the results of the educational and speech/language evaluations, as well as the psychiatric diagnosis. When applicable, medication prescribed at the time of discharge is also noted. The results of the educational and speech/language evaluations indicate that there were no educational diagnosis of specific developmental disability in reading; 25% (4 students) had a speech/language disorder; 6.25% (1) had a diagnosis of mental retardation; and, 68.75% (11) had no educational diagnosis or a diagnosis that was deferred.

There were 50% (8) of the students that received a discharge diagnosis of ADHD and conduct disorder. Only 12.5% (1) students was discharged on medication. There was 18.75% (3) students that received a discharge diagnosis of ADHD and major depression. All of these students were discharged on medication. In 6.25% (1) case, a student received a discharge diagnoses of ADHD, conduct disorder, and major depression. The student was also on anti-depressant medication at the time of discharge. Other psychiatric discharge diagnoses were given to 25% (4) of the students at discharge including polysubstance abuse, bipolar disorder, and travestic fetishism.

Table 3 shows the educational placement prior to psychiatric hospitalization as compared to the treatment team recommendations. There was 6.25% (1) student that had special educational placements prior to hospitalization, 81.25% (13) were in regular education, and 12.5% (2) were in the drop-out category.

The educational recommendations made by the treatment team were for 62.50% (10) to be placed in special education, 25% (4) to receive regular education services, and 12.50% (2) to drop-out of regular and special education programs. Due to a discharge from the hospital against medical advice, there were no recommendations made for one student.

Group III

As illustrated in Table 5, Group III consisted of 10 subjects whose score on the CPRS-R was in the severe range 2.5 - 3.0 (\bar{x} =2.62; SD=0.15). This group consisted of 6 males and 4 females. Nine subjects were Caucasian, and one was an African-American male. Ages ranged from 13 to 17 years (\bar{x} =15.75; SD=1.01).

The Wechsler verbal scores ranged from 78 - 99 (\bar{x} =86.11, SD=2.15), the performance scores ranged from 74 - 107 (\bar{x} =96.44, SD=5.55), and the full scale scores ranged from 74 - 103 (\bar{x} =90.56, SD=3.75). The reading achievement level ranged from 3.2 - 12.9 grade equivalent (\bar{x} =7.13, SD=3.08).

Table 2 shows the results of the educational and speech/language evaluations, as well as the psychiatric diagnosis. The results of the educational and speech/language evaluations indicate that there were no students with an educational diagnosis of specific developmental disability in reading; 40% (4) had a speech/language disorder; and, 60% (6) had a diagnosis that was deferred or no educational diagnosis.

There were 50% (5) of the students that received a discharge diagnosis of ADHD and conduct disorder. None of these students were discharged on medication. There were no students that received a discharge diagnosis of ADHD and major depression. In 10% (1) case, a

Table 5. Group III scores for age, Conners, Wechsler and Woodcock-Johnson with range, mean, and standard deviation

Scores	M/F	Age	Conners	Verbal	Wechsler Score Performance	Full Scale	Woodcock-Johnson Reading Grade Equivalent
Range	6/4	13-17	2.5-3.0	78-99	74-107	74-103	3.2-12.9
\bar{x}		15.75	2.62	86.11	96.44	90.56	7.13
SD		1.01	0.15	2.15	5.55	3.75	3.08

student received a discharge diagnoses of ADHD, conduct disorder, and major depression. This student was on anti-depressant medication at the time of discharge. Other psychiatric discharge diagnoses were given to 40% (4) of the students at discharge including polysubstance abuse, personality disorder, and ADHD without a co-existing psychiatric disorder.

Table 3 shows the educational placement prior to psychiatric hospitalization as compared to the treatment team recommendations. There were 30% (3) students that had special education placements prior to hospitalization, 50% (5) were in regular education, and 20% (2) were in the drop-out category.

The educational recommendations made by the treatment team were for 70% (7) to be placed in special education, 20% (2) to receive regular education services, and 10% (1) to drop-out of regular and special education programs.

Procedures

The following procedures were implemented during each student's hospitalization and at the time of discharge:

1. Within 48 hours of admission, the educational liaison contacted the last school the student had attended, (if appropriate) by telephone and recorded basic information including placement in regular or special education programs.

2. An age-appropriate Wechsler intelligence test and a reading achievement test from the Woodcock-Johnson were individually administered to evaluate current level of functioning. When possible and as appropriate, students were also evaluated to rule out the existence of speech/language disorders. Unfortunately, since the

speech/language pathologist was a part-time employee, many of the students referred to here are not evaluated. In these cases, the educational diagnosis was deferred.

3. At the time of discharge from the psychiatric hospital, the treatment team made recommendations based on the educational evaluation as well as the speech/language evaluation. The psychiatric diagnosis was also considered in making the recommendation as well as whether or not the student was on medication.

4. The recommendations of the treatment team were transmitted both verbally as well as in writing to the home school. Copies of the actual test results were attached to each written report to provide school personnel with information pertaining to the treatment teams recommendations. If a student needed further evaluations to determine the appropriate placement such as a speech-language evaluation, this was part of the discharge recommendation as well. Lastly, a copy of the psychiatric discharge summary was also included. This summary indicated whether or not the student was on medication, the dosage, and possible side effects.

5. Preparation for analyzing the possible differences between educational placement prior to hospitalization and following discharge involved contacting each school in writing. The follow-up letter specifically asked for the student's current educational placement. A list and narrative description of educational choices from least to most restrictive were listed, and a self-addressed, stamped envelope was also enclosed. Information was received from 90.48% of the schools contacted.

Unfortunately, the responses from the schools were often vague, indicating that the student was in special education but not identifying the primary handicapping condition. In addition, some of the letters indicated that the student had dropped out of school or was attending a private school. The specific kind of private school the student attended was not available, i.e. whether the student pursued a GED, vocational training, alternative school, or a non-secular program. Therefore, these students were all collapses into the drop-out category for reporting purposes.

Data Analysis

Statistics

In order to address the research questions posed in Chapter 1, descriptive and inferential statistics were employed. Where descriptive statistics were used, frequency distribution tables summarize the data, including counts with central tendency, percentiles, and simple sums. Individual scores are also described numerically as appropriate, and include the standard scores and norms.

An Analysis of Variance (ANOVA) was used to determine if selected variables such as I.Q., reading achievement scores, and severity of ADHD symptomatology were different from pre- to post-hospitalization placement. Statistical differences across each placement condition were evaluated, as well as statistical differences among variables, using ad hoc procedures.

CHAPTER 4

Results

The results of the descriptive and inferential analyses are reported in this chapter. Descriptive statistics were used to address the first two research questions posed in the introduction: Of those students who entered the psychiatric hospital with a prior special educational placement, are there changes in the category of placement upon their discharge?; and, what changes, if any, occur with students that have not previously been identified as in need of special education? Results are reported by group with comparisons made to the pre-hospitalization educational placement and treatment team recommendations. Tables are provided throughout the results to illustrate the data.

Inferential statistics consisting of analysis of variance, Chi-square, and multi-variate analysis of variance were utilized in order to determine if there were selected variables such as gender, I.Q., reading achievement level, and/or severity measures on the Conners Parent Rating Scale that were associated with post-hospitalization placement.

Descriptive Statistics

Presented in Table 6 are the follow-up data for those students identified as having mild ADHD symptomatology (Group I). As indicated, at the time of admission, 13.16% (5) were receiving special education services, 18.42% (7) were identified as drop-outs and 68.42% (26) were in the regular educational program.

Table 6. Pre- and post-hospitalization educational placements compared to treatment team recommendations for groups I, II, and III

	Pre-Hospitalization	Post-Hospitalization	Recommendations
Group I (mild)			
Regular	68.42% (26)	34.21% (13)	36.84% (14)
Special	13.16% (5)	26.32% (10)	50% (19)
Drop-out	18.42% (7)	26.32% (10)	13.16% (5)
Other	0%	13.6% (5)	0%
Group II (moderate)			
Regular	81.25% (13)	25% (4)	25% (4)
Special	6.25% (1)	18.75% (3)	62.5% (10)
Drop-out	12.5% (2)	43.75% (7)	12.5% (2)
Other	0%	12.5% (2)	0%
Group III (severe)			
Regular	50% (5)	20% (2)	20% (2)
Special	30% (3)	0% (0)	70% (7)
Drop-out	20% (2)	70% (7)	10% (1)
Other	0%	10% (1)	0%

Following discharge from the psychiatric hospital, 26.32% (10) were receiving special education services, 26.32% (10) were identified as drop-outs, 34.21% (13) were in the regular educational program, and the placement of 13.6% (5) were unknown. Actual academic recommendations made by the treatment team were 50% (19) for placement in special education, 13.6% (5) to drop-out of the regular and special educational programs to pursue a GED and/or vocational rehabilitation training, and 36.84% (14) to continue in a regular educational program. The post-hospitalization results demonstrate an increase in the percentage of students receiving special education services, an increase in the percentage of students considered drop-outs from the regular education program, and a decrease in the percentage of students returning to the regular education program. Treatment team recommendations appear to be most consistent with the identified regular education group. It appears that the recommendations made by the psychiatric hospital staff for special education services were not implemented in 23.68% of the cases. The majority of these students were identified as dropping out of regular education or were in the group of students whose post-discharge placement was unknown.

Follow-up data for those students identified as having moderate ADHD symptomatology (Group II) are presented in Table 6. At the time of their admission, 6.25% (1) was receiving special education services, 12.5% (2) were identified as drop-outs, and 81.25% (13) were in the regular educational program.

Following discharge from the psychiatric hospital, 18.75% (3) were receiving special education services, 43.75% (7) were identified as drop-outs, 25% (4) returned to the regular educational program and the

placement of 12.5% (2) of the students was unknown. Actual academic recommendations made by the treatment team were 62.5% (10) for placement in special education, 12.5% (2) to drop-out of the regular education to pursue a GED and/or vocational rehabilitation training and for 25% (4) to continue in regular education services. When reviewing the results of these descriptive statistics, it appears that treatment team recommendations for special education services and for the drop-out group were generally not implemented.

Follow-up data for those students identified as having severe ADHD symptomatology (Group III) are presented in Table 6. At the time of admission, 30% (3) were receiving special education services, 20% (2) were identified as drop-outs, and 50% (5) were in the regular education program.

Following discharge from the psychiatric hospital, none of the students were receiving special education services, 70% (7) dropped-out of the regular educational program, 20% (2) returned to the regular educational program, and the placement of 10% (1) was unknown. Actual treatment team recommendations were for 70% (7) placement in special education, 10% (1) to drop-out of the regular education program to pursue a GED and/or vocational rehabilitation training and for 20% (2) to continue in regular services. When reviewing the descriptive statistics for this group, it appears that treatment team recommendations were generally not accepted for either the special education group or the drop-out group.

Summary of Descriptive Statistics

Data in Table 7 describe by cross-tabulation the educational placement for all groups before and after hospitalization. In general,

Table 7. Cross-tabulation of pre- and post-hospitalization educational placements for groups I, II, and III

		Pre-Hospitalization		
		Regular	Special	Drop-Out
Post-Hospitalization	Group I (mild)			
	Regular	8	2	3
	Special	9	1	0
	Drop-out	5	2	3
	Other	4	0	1
	Group II (moderate)			
	Regular	4	0	0
	Special	3	0	0
	Drop-out	4	1	2
	Other	2	0	0
	Group III (severe)			
	Regular	1	0	1
	Special	0	0	0
Drop-out	4	3	1	
Other	0	0	0	

psychiatric hospitalization resulted in changes in the educational placement of all three groups. In group I, only 12 of 38 students (31.58%) remained in the same educational placement; in group II, only 6 of 16 students (37.5%) remained in the same educational placement; and, in group III, only 2 of 10 (20%) remained in the same educational placement. The number of drop-outs more than doubled from 15.63% (10) pre-hospitalization to 37.5% (24) following discharge from the psychiatric hospital for all subjects in the study.

Data in Table 8 illustrate by cross-tabulation the post-hospitalization educational placements compared to treatment team recommendations for groups I, II, and III. In general, recommendations for educational placement following psychiatric hospitalization were not implemented. In group I, only 13 of 38 students (34.21%) were placed according to the treatment team's recommendations; in group II, only 6 of 16 students (37.5%) were placed according to the treatment team's recommendations; and, in group III, only 2 of 10 students (20%) were placed according to the treatment team's recommendations.

Inferential Statistics

Inferential statistics were used to analyze the last research question; are there selected variables such as gender, I.Q., reading achievement scores and severity of the ADHD condition that affect post-hospitalization placement? Tables and graphs are used to illustrate the results.

Analysis for Combined Variables

A multivariate analysis of variance was conducted to determine whether there were significant differences among the four variables,

Table 8. Cross-tabulation of post-hospitalization educational placements compared to treatment team recommendations for groups I, II, and III

		Post-Hospitalization			
		Regular	Special	Drop-Out	Other
Treatment Team Recommendations	Group I (mild)				
	Regular	4	5	4	1
	Special	9	5	3	3
	Drop-out	0	0	4	1
	Group II (moderate)				
	Regular	2	1	1	0
	Special	2	2	6	0
	Drop-out	0	0	2	0
	Group III (severe)				
Regular	0	0	2	0	
Special	2	0	4	0	
Drop-out	0	0	2	0	

I.Q., reading level, gender, and severity on the Conners rating scale. Results indicated that the variables as a set (or profile) differed among the three placement groups ($p = 0.0041$), by the likelihood ratio known as Wilks' lambda criterion.

Analysis for Intelligence

A one way analysis of variance (ANOVA) was conducted to determine whether there was a significant difference among the placement groups for I.Q. The results, as summarized in Table 9, indicated no significant difference among the groups for I.Q. ($F(2,61) = 1.94$, $p = 0.15$).

Analysis for Reading Level

Figure 1 illustrates the mean reading level by placement group. A one way ANOVA for reading level, summarized in Table 10, indicated significant differences among the groups by placement ($F(2,61) = 3.78$, $p = 0.028$). Using the post-hoc Tukey-Kramer method, subjects placed in the public school had a significantly higher mean ($p < .05$) reading level than subjects who dropped out of school.

Analysis for Gender

Figure 2 indicates the percentage of males in each of the post-hospitalization placements. The likelihood ratio Chi-square for equality of proportions and the Pearson's Chi-square tests were conducted to determine if there was a significant difference among post-hospitalization placement groups by gender. There appeared to be a significant disparity in gender among the placement groups ($p = 0.027$) by the likelihood ratio Chi-square test for equality of proportions. Pearson's Chi-square was also significant ($p = 0.030$). The special

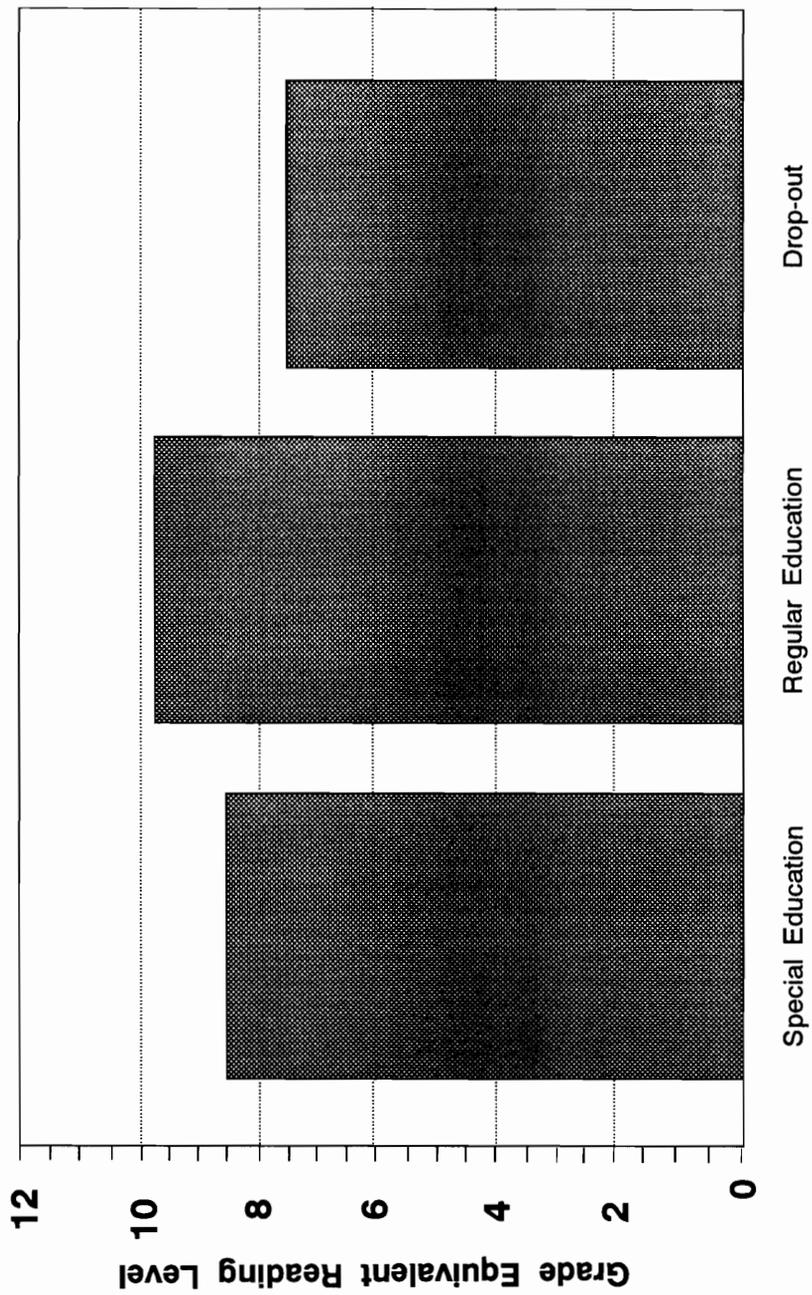


Figure 1. Mean reading level by post-hospitalization placement group.

Table 9. Results of analysis of variance for I.Q.

Source	Degree of Freedom	Sum of Squares	Mean Square	F Value	Probability
Model	2	949.33	324.66	1.94	0.15
Error	61	10194.15	167.11		
Corrected Total	63	10843.48			

Table 10. Results of analysis of variance for reading level

Source	Degree of Freedom	Sum of Squares	Mean Square	F Value	Probability
Model	2	68.59	34.30	3.78	0.028
Error	61	553.75	9.08		
Corrected Total	63	622.34			

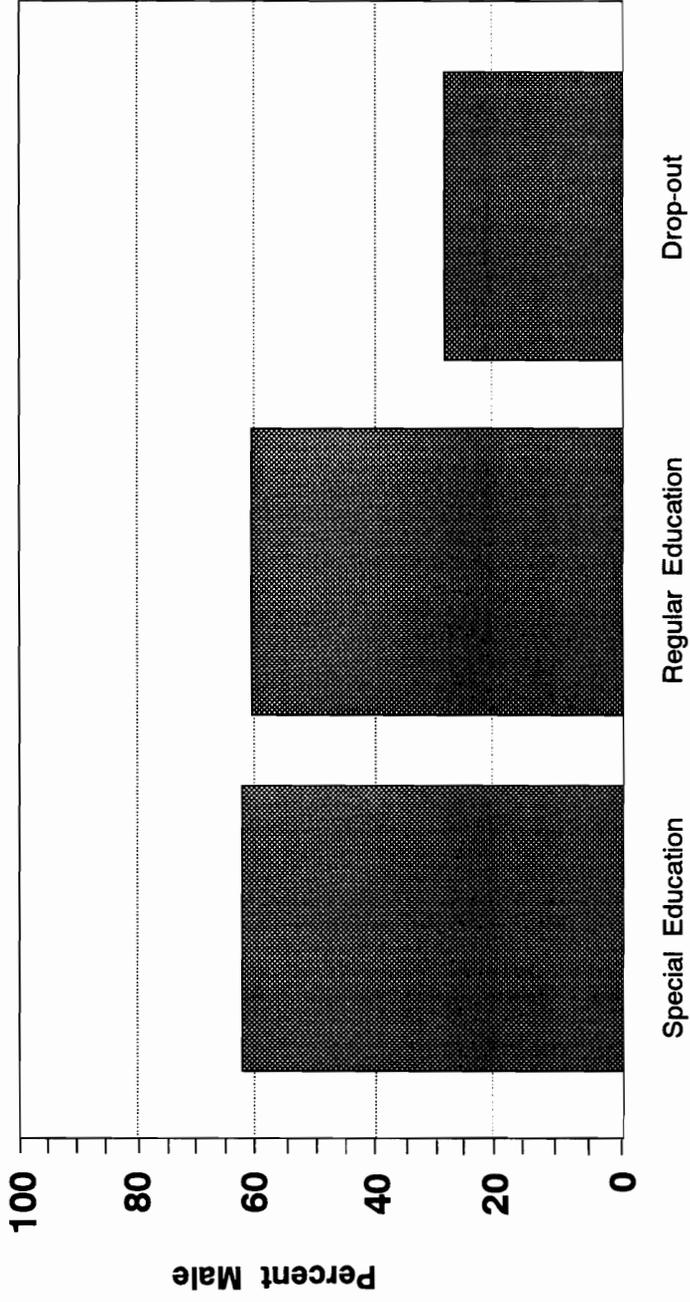


Figure 2. Percent male by post-hospitalization placement.

education group was 61.54% male; the regular school group was 60% males; the drop-outs were only 26.92% male.

Analysis for Severity

Figure 3 shows the percentage of subjects in each post-hospitalization placement category based on the Conners rating scale. The likelihood ratio Chi-square for equality of proportions and the Pearson Chi-square tests were also conducted to determine if there was a significant difference among post-hospitalization placement groups based on the severity of the Conners rating scale. Severity of the problem appeared to be significantly associated with placement ($p = 0.016$), for the likelihood ratio Chi-square, or for the Pearson's Chi-square ($p = 0.031$). Of the special education group, 76.92% had a severity score of 1 (mild); 23.08% had a severity score of 2 (moderate); and, there were no children with a severity score of 3 (severe). Of the regular education group, 72.00% had a severity score of 1 (mild), 20.00% had a severity score of 2 (moderate), and 8% had a severity score of 3 (severe). These two patterns are similar. The drop-out group, however, was again clearly different. Of the drop-out group, 38.46% had a severity score of 1 (mild); 30.77% had a severity score of 2 (moderate); and, 30.77% had a severity score of 3 (severe).

Summary

Data indicate that for those students who entered the psychiatric hospital with a prior special education placement, there was an increase in the category of special education placement for the mild and moderate ADHD groups. There was insufficient information obtained to determine if the change was to a more restrictive placement. In the severe ADHD

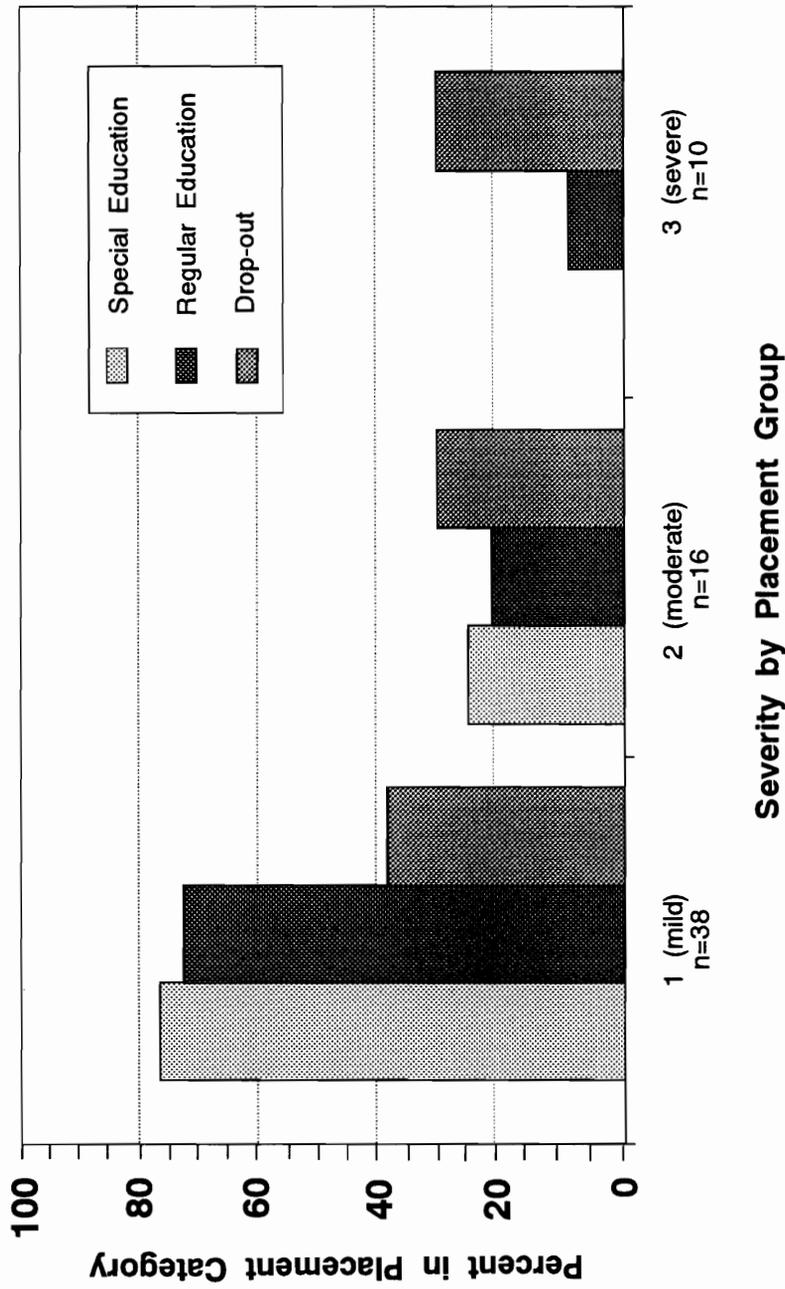


Figure 3. Percent in post-hospitalization placement category by severity.

group, those students who entered the psychiatric hospital with a special education placement did not return to public school.

For those students who entered the psychiatric hospital in a regular education program, there was a decrease in the category of regular education placement for all three groups. Therefore, those students who entered the psychiatric hospital in a regular education program were less likely to return to their same educational program, and were more likely to be placed in special education, GED, vocational rehabilitation or private school programs.

In determining what characteristics of the group corresponded with the educational placement, the variables I.Q., reading level, gender, and severity of the Conners score were analyzed. The results indicated that I.Q. did not distinguish the groups from their educational discharge placement. Reading level was associated with placement, with higher mean reading levels found in the students attending public school. Males were more likely to make-up the regular and special education placement, while females were more likely to drop-out of regular education programs. Severity of the ADHD symptomatology, as measured by the Conners scale was also related to discharge educational placements. Students in the mild and moderate ADHD groups, were more likely to receive either a regular or special education placement. The severe ADHD group was less likely to receive either a regular or special education placement, and continued their educations in GED, vocational rehabilitation, or private school programs.

CHAPTER 5

Discussion, Conclusions, and Implications

The purpose of the present investigation was to determine if psychiatric hospitalization for students identified as ADHD resulted in a change in educational placement following discharge from the hospital. Comparisons were made between pre- and post-hospitalization educational placements, as well as treatment team recommendations and post-hospitalization educational placements. Variables such as I.Q., reading level, gender, and severity of the ADHD condition were analyzed to see if they were associated with the post-hospitalization educational placement. The following sections were developed to facilitate the discussion of this study's findings: Educational Placement Following Discharge from the Psychiatric Hospital, Variables Associated with Discharge Placement, and Limitations of the Present Study and Implications for Further Research.

Educational Placement Following Discharge from the Psychiatric Hospital

Of the 64 students included in the study, 14.06% or 9 students were receiving special education services prior to psychiatric hospitalization, as compared to 20.31% or 13 students following discharge. This resulted in an overall change in special education placement for only 6.25% or 4 students. However, these results are misleading without discussing the movement among placement categories that took place within each severity group.

In the mild ADHD group, 2 of the 5 students that entered the hospital receiving special education services dropped out of school following discharge from the psychiatric hospital. The remaining students from the special education group, with one exception, were placed in more restrictive special education placements following their re-entry into public school; i.e. one student placement was changed from a resource classroom to a self-contained public day school program. One student, as mentioned previously, remained in the resource placement. Thus, for the majority of students identified as mild ADHD, psychiatric hospitalization led to a more restrictive educational placement. The number of special education students that dropped out of school also increased for this group. Two of the students in the drop out category at follow-up had been identified as eligible for special education prior to hospitalization by their home school.

In the moderate ADHD group, the one identified special education student prior to psychiatric hospitalization dropped out of school in order to pursue a GED. Two regular education students were placed in special education at the time of their re-entry to the public school. One student was placed in a resource class and the other student was placed in a self-contained situation. Both placements were more restrictive educationally. The number of special education students that dropped out of school also increased for the moderate ADHD group.

In the severe ADHD group, 3 students were receiving special education services prior to their admission to the hospital. However, at the time of follow-up, all three of these students had dropped out of school, increasing the number of drop-outs in the severe group as well.

The results of this study differ in many ways from the Forness (1983) study. First, only 14.06% of the subjects in this study had been in special education placements prior to psychiatric hospitalization, as compared to 33.33% in the Forness (1983) study. Second, at the time of discharge from the psychiatric hospital, 20.31% of the students in the present study were identified as special education students as compared to 80% in the Forness (1983) study, and the 76% recommended by Laufer (1986) and Loney et al. (1981). Part of the difference may be due to the difference in the classification schema between California and Alabama. In California, students identified as learning disabled, behaviorally disordered, and mildly mentally retarded are identified as learning handicapped (LH), and seriously emotionally disturbed, moderately to severely mentally retarded, and severely speech or language handicapped are identified as severely handicapped (SH). In Alabama, seriously emotionally disturbed children and youth are identified as emotionally conflicted (EC); learning disabilities and language disorders are identified as learning disabled (LD); and, retardation classrooms are divided by severity into mild, moderate, or severe. Since students with behavior disorders are not eligible for special education services unless they are seriously emotionally disturbed, this may explain part of the reason that fewer students in the current study were found eligible for special education services. Thus, for those students that entered the hospital as identified special education students, there was not as dramatic an increase in special education services as in the original study or as predicted by other studies. Even if the treatment team recommendations had been accepted by the schools

on the students in this study, only 56.25% (36) would have been placed in special education programs.

For those students identified as special education students post-hospitalization, their educational placements were more restrictive, similar to the original study. Of interest is the increase in the drop-out rate across groups following discharge for students that were receiving special education prior to their admission to the psychiatric hospital. Not including those students in the drop-out category that were attending either private schools or pursuing a GED, 6 of the students or 28.57% were not in any educational program at follow-up but had received special education services prior to psychiatric hospitalization. The figure of 28.57% comes very close to the overall 30% drop-out rate for special education students as previously reported by Edgar (1987) and the 35% drop-out rate for ADHD students reported by Barkley (1990).

Thus, it appears that the result of psychiatric hospitalization for most of the ADHD students that were identified as special education prior to admission, is a more restrictive educational placement, or a tendency to withdraw from school. The percentage of special education students that dropped out of school was a surprising result of this study since it had not been addressed in the Forness (1983) study as an outcome. One would hope that psychiatric hospitalization would lead to a better school adjustment and reduction of the number of drop-outs, not an increase. What is not known, and is a limitation of this study, is whether or not the teachers working with these students and their parents/guardians regarded their post-hospitalization placements as

appropriate or not. This kind of feedback would have assisted in the determination of the overall appropriateness of the educational placement. Furthermore, since hospitalization averaged 57 days, a more prolonged hospitalization may have resulted in improved levels of school functioning. However, most psychiatric hospitals, partly due to funding from third-party insurance payments, have increasing shorter lengths of stay (Forness, 1983). Given such limits on psychiatric hospital care, educators might more reasonably look to psychiatric hospitals as centers for evaluation or short-term treatments (Forness et al., 1983).

It is also unclear what the reasons were for not accepting the treatment team recommendations that were made to the public school. A variety of possibilities can be discussed including the lack of communication between the psychiatric hospital and school staff. As noted previously, the use of psychiatric language is not always easy to translate into special education terminology. It may be that the parents and/or students did not agree with and/or understand the treatment team recommendations but were hesitant to voice their objections to the professionals working with their child/adolescent. The students in the study may have refused services despite the parents/guardians support of the treatment team recommendations. Furthermore, the services recommended may not have been available in the home school district. Lastly, at the age of 16, many of the students may have exercised their right to drop-out of school. Without follow-up data evaluating these variables, one can only speculate. Further studies on this topic should also involve follow-up on these issues.

These results illustrate the importance of the school, hospital staff, and parents/guardians working together for the benefit of these

students, sharing information that will aid in proper placements, and ultimately preventing students from dropping out. As Forness (1983) noted, this study also demonstrates the continued problems with integration of services between the public school and the psychiatric hospital, as well as the role of public school personnel in regard to institutionalized students, whether or not they have been previously referred to the EDC.

ADHD and Developmental Disabilities

As noted in Bohline's study (1985), the students in this study were found to have general intelligence that is slightly below the normal population I.Q. of 100. The mean I.Q.'s for Groups I, II, and III were respectively 94.85, 92.44, and 90.56, averaging 92.61 as compared to a mean I.Q. of 92.9 in the Forness et al. (1983) study. Therefore, I.Q. results are comparable and below the average. In fact in Group I, 15.79% (6) students received a DSM-III-R diagnosis of borderline intellectual ability, and 2.63% (1) student received a DSM-III-R diagnosis of mental retardation in addition to the ADHD diagnosis. In Group II, 6.25% (1) student received a diagnosis of mental retardation. There were no borderline or diagnoses of mental retardation for Group III.

Reading level grade equivalents were 9.36 for Group I, 8.50 for Group II, and 7.13 for Group III averaging 8.33 as compared to 5.9 in the Forness (1983) study. Therefore, the reading level grade equivalents for the present study were higher than the Forness (1983) study. It may be that the higher reading levels found in this study, resulted in a fewer number of students placed in special education rather than regular education.

Developmental disabilities in the area of reading were only identified in the cases of 4.76% (3) students in the entire study. This percentage is much lower than the expected 19-26% estimated by Barkley (1990), but does not take into account disabilities in other academic skills or processing disorders.

Speech and/or Language Disorders

There were 25.40% (16) students identified with speech and/or language disorders. This percentage is consistent with the 20-30% that Barkley (1990) estimates. Some additional 20.64% (13) students were also suspected of having speech and/or language disorders. These studies received a deferred diagnosis pending the results of further testing. It is not known how many, if any, were tested by the home school upon their return or what the results of the evaluations demonstrated.

ADHD, Conduct Disorders, and Medication

As previously discussed, many researchers believe ADHD to be a symptom of a conduct disorder. These researchers postulate that 60% of these children and adolescents with ADHD have problems with oppositional and defiant behavior and that 25% will ultimately be diagnosed with a conduct disorder (Barkley, 1990). There is no known research about the percentage of these children and adolescents that require psychiatric hospitalization, although it has been estimated that they make-up 40% of clinic out-patient referrals. This study demonstrated that 43.75% of the students referred during a three month period met the DSM-111-R criteria for ADHD, a percentage that approximates the overall percentage of clinic referrals. However, further research in this area is needed before a specific conclusion can be drawn. Attention deficit

hyperactivity disorders and oppositional behavior/conduct disorders were diagnosed in 57.14% of the cases in this study which is consistent with research previously discussed.

Educational placement following discharge resulted in 29.68% placement in regular education, 20.31% in special education, and 37.5% in the drop-out category. It is unclear why the majority of these students were not identified as eligible for special education, although some possible reasons can be suggested. Since OSERS has only recently clarified their position on ADHD students, it may be that the diagnosis of ADHD prevented the student from getting appropriate services. The same may be true for the diagnosis of conduct disorder since this diagnosis is often interpreted as synonymous with juvenile delinquency, a category not served by P.L. 101-476.

Furthermore, it is unclear from other studies whether students had dropped out of school altogether or whether they were in GED or vocational rehabilitation programs. Certainly, some of these students that dropped out of high school may have been better suited for alternate education programs such as the ones previously described. Since this group is known to be at high-risk for drop-out, further research about the most appropriate education for these students is suggested.

Only 17.14% of the ADHD and conduct disorder group were medicated. This is particularly interesting given the research that indicates that the persistence of hyperactive symptoms is most consistent with poor school performance as well as negative outcomes at adulthood. The medication used in all cases was an anti-depressant rather than a

psychostimulant possibly because of the risk of substance abuse that this group is known to have. It is not known how many of these children/adolescents continued in therapy, which would have been an additional concern in prescribing medication. It may also be that the parents/guardians and the child refused medication therapy. It is interesting to note that the ADHD/conduct disorder group was almost equally represented across all three severity groups.

ADHD, Depression, and Medication

There were 19.05% of the students identified with ADHD and depression. Although the hypothesis that ADHD is a variant of depression has been disproved (Gittleman, et al., 1985), few researchers dispute the fact that low self-esteem is a side effect of the ADHD condition. In this study, all of the students with a co-existing diagnosis of ADHD were placed on anti-depressant medication. Furthermore, students with depression were three times more likely to be found in the mild ADHD group as compared to the moderate ADHD group, with no students in the severe ADHD group. One wonders if the depressive overlay may have disguised some of the ADHD symptomatology, resulting in less severe hyperactivity as reported on the Conners.

Based on the results of this study, the ADHD/depressive group was as likely to remain in public education as they were to drop-out. It is interesting to note that even with a diagnosis of depression and placement on medication, only one student was found eligible for special education at the time of discharge. It is also likely that the depression noted was situational and was exaggerated following psychiatric hospitalization.

ADHD and Genetics

Although a high correlation of ADHD has been noted among fathers of ADHD children, this study did not look at the genetic contribution. Certainly this would be an area of great interest for future studies given the prevalence of alcohol and substance abuse, antisocial personality disorders in fathers, hysterical personality disorders in mothers, and related educational disabilities that have been found.

From a more sociological point of view, it would be interesting to find out the educational level of the parents of the children who dropped out of school. One wonders what influence a parent's educational level has on their child/adolescent, and how this factor affected the drop-out rate observed in this study. Unfortunately, a number of the children/adolescents in this study were wards of the state so this information was unavailable.

Variables Associated with Discharge Placement

Intelligence was not associated with placement categories for the mild, moderate, or severe placement groups. This is consistent with the Forness (1983) study and was expected based on the literature.

Reading level was significant for those ADHD students that were placed in the regular education group following discharge. These results were expected as students with a higher reading level should be better able to function independently in class. However, as noted previously, reading levels measured in this study were much higher than those measured in the Forness et al. (1983) study. The difference may be a result of the differences in the referral populations, but no specific conclusions can be drawn from the available data.

Gender was found to be significantly associated with discharge placement categories. The percentage of males in the special education and regular education placements was roughly equal, about 60%. However, the drop-out group was considerably different with the percentage of females almost 65%. These results were not expected since the overall male to female rate for the ADHD condition has been reported as high as 9:1 (Campbell, 1976). The results certainly require further exploration.

Severity of the ADHD symptomatology was also associated with discharge placement. One would think that the majority of the mild ADHD students would be in regular education, that the majority of moderate ADHD students would be in either regular or special education, and the majority of the severe ADHD would be in the special education category. However, Figure 3 showed a completely different pattern. For those students identified as mild ADHD, they are about equally represented in special and regular education, with a few students listed as drop-outs. For those students identified as moderate ADHD, special and regular education were again almost equally represented, but the majority of the students had dropped out of school. For the severe ADHD group, a small percentage has remained in the public school, but a majority has once again dropped out of school. Therefore, a pattern emerges suggesting that the moderate and severe ADHD students are not remaining in the public school system.

Conclusions

In conclusion, the result of psychiatric hospitalization for most of the ADHD students was a more restrictive educational placement, or a

tendency to withdraw from school. Although I.Q. was not associated with the type of post-hospitalization placement, reading level was significantly higher for students in the regular or special education groups as compared to the drop-out group. Speech and language disorders were diagnosed for 25.40% (16) of the students which is consistent with the current literature. The more severe ADHD students were the most likely to drop-out of school, and girls were more likely to drop-out than boys.

Limitations of this Study and Implications for Further Research

There were certain unavoidable limitations in the research design of this study. First, there was no comparison group of non-hospitalized subjects against which to compare changes in special education placement. Second, the group size for the severe ADHD students may have been too small to generalize any findings. The fact that more African-American were not represented in the study limits the study's generalizability, as well.

Third, it may be that the Conners Rating Scale does not adequately distinguish "true" ADHD students from students with "secondary" or "reactive" ADHD. As noted previously, "normal" adolescents go through periods of anti-social behavior coupled with disorganization that may mimic "true" ADHD. The difference is that "true" ADHD is chronic and pervasive, and can be documented developmentally at an early age. Examples of "secondary" or "reactive" diagnoses are post traumatic stress syndrome, agitated depression, alcohol or substance abuse withdrawal, and disorders with organic etiologies. If misclassification of the ADHD students did occur, then some of the treatment team

recommendations may have been inappropriate. In addition, the treatment team based their recommendations on both the psychiatric as well as the educational diagnosis. Since discharge diagnoses were made by various psychiatrists, the agreement among psychiatrists is unknown. The same issue can be discussed for medicine, since the kind of medicine used by a psychiatrist is often a personal one depending on their experience and knowledge of the current research.

Fifth, since diagnostic testing was done during the first 10 days of hospitalization, test findings may be invalid in some cases. For example, many adolescents were extremely angry about being hospitalized and may have been less than cooperative during testing. Or, a student with an underlying depression may have not functioned at potential. These types of situations could have resulted in either the over or the under classification of learning disabilities, which would have affected treatment team recommendations, too.

Sixth, it may have been useful to include other demographic data and/or psychosocial factors such as chronological age, income and education level of parents, and social support scales to explain other variables that may be related to placement categories at the time of discharge. Furthermore, information as to the special education programs available in the various school districts would assist in the interpretation of the data. It would be interesting to know if parent education about ADHD and special education rights would have affected the post-hospitalization educational recommendation.

Even with all these limitations, the results of this study present areas of interest for further research. In the Forness (1983) population sample, 60% were males, compared to an almost even 50% male

to female ratio in this study. Although most research suggests that males outnumber females for the ADHD condition, it could be that this does not hold true for the psychiatric population and that equal numbers of males and females with ADHD are hospitalized. It could also be that since more adolescents are being referred for treatment, this has increased the number of females in the population.

Further research is recommended on the drop-out rate of special education students following psychiatric hospitalization to determine the validity of this current study and/or what variables might predict a future drop-out. This information could help in identifying programs tailored to the needs of this group.

The high rate of females in the severe ADHD group, as well as the drop-out group, bears further investigation. One wonders if females have previously been underidentified and been given the more traditional female diagnosis, like depression, or if females are being over-identified with the ADHD diagnosis in lieu of more pervasive psychiatric diagnosis, like conduct disorder. In addition, it seems unusual to have such a high rate of female drop-outs in a sample this size and the reasons for the drop-out rate are not known.

This study did not take into account those ADHD students, without hyperactivity as a symptom. This group of students would also be an area of interest for future studies.

In light of the Office of Special Education's Policy Statement which clarifies that students with ADHD could receive special education services from the other health impaired (OHI) program, if found eligible, it will be interesting to determine how that policy affects the numbers of ADHD students referred for services. Although this

policy suggests that more services will be available for ADHD students, this depends on the availability of OHI services, the school's commitment to the affirmative duty to refer these students for services, the awareness of parents/guardians about their rights, and the money and teachers available to provide these services. In Alabama, several of the major school systems are approaching bankruptcy and are unable to provide many regular or special services. Although it has been ruled illegal, some of the systems had discussed shortened school years, and have had to borrow revenues from various resources. There are school systems in the state that have no special education services, that have not been challenged legally. Certainly, with this kind of financial challenge, ADHD students may not reap the benefits of their rights, for awhile.

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APPENDICES

Appendix A: Diagnostic criteria for attention-deficit hyperactivity disorder

Note: Consider a criterion met only if the behavior is considerably more frequent than that of most people of the same mental age.

A. A disturbance of at least six months during which at least eight of the following are present:

- (1) often fidgets with hands or feet or squirms in seat (in adolescents, may be limited to subjective feelings of restlessness)
- (2) has difficulty remaining seated when required to do so
- (3) is easily distracted by extraneous stimuli
- (4) has difficulty awaiting turn in games or group situations
- (5) often blurts out answers to questions before they have been completed
- (6) has difficulty following through on instructions from others (not due to oppositional behavior or failure of comprehension), e.g., fails to finish chores
- (7) has difficulty sustaining attention in tasks or play activities
- (8) often shifts from one uncompleted activity to another
- (9) has difficulty playing quietly
- (10) often talks excessively
- (11) often interrupts or intrudes on others, e.g., butts into other children's games
- (12) often does not seem to listen to what is being said to him or her
- (13) often loses things necessary for tasks or activities at school or at home (e.g., toys, pencils, books, assignments)
- (14) often engages in physically dangerous activities without considering possible consequences (not for the purpose of thrill-seeking), e.g., runs into street without looking

Note: The above items are listed in descending order of discriminating power based on data from a national field trial of the DSM-III-R criteria for Disruptive Behavior Disorders.

B: Onset before the age of seven.

C. Does not meet the criteria for a Pervasive Developmental Disorder.

Criteria for severity of Attention-deficit Hyperactivity Disorder:

Mild: Few, if any, symptoms in excess of those required to make the diagnosis and only minimal or no impairment in school and social functioning.

Moderate: Symptoms or functional impairment intermediate between "mild" and "severe."

Severe: Many symptoms in excess of those required to make the diagnosis and significant and pervasive impairment in functioning at home and school and with peers.



Appendix B:
 UNITED STATES DEPARTMENT OF EDUCATION
 OFFICE OF SPECIAL EDUCATION AND REHABILITATIVE SERVICES

THE ASSISTANT SECRETARY

MEMORANDUM

SEP 16 1991

DATE :

TO : Chief State School Officers

FROM : Robert R. Davila *Robert R. Davila*
 Assistant Secretary
 Office of Special Education
 and Rehabilitative Services

Michael L. Williams *Michael L. Williams*
 Assistant Secretary
 Office for Civil Rights

John T. MacDonald *John T. MacDonald*
 Assistant Secretary
 Office of Elementary
 and Secondary Education

SUBJECT: Clarification of Policy to Address the Needs of
 Children with Attention Deficit Disorders within
 General and/or Special Education

I. Introduction

There is a growing awareness in the education community that attention deficit disorder (ADD) and attention deficit hyperactive disorder (ADHD) can result in significant learning problems for children with those conditions.¹ While estimates of the prevalence of ADD vary widely, we believe that three to five percent of school-aged children may have significant educational problems related to this disorder. Because ADD has broad implications for education as a whole, the Department believes it should clarify State and local responsibility under Federal law for addressing the needs of children with ADD in the schools. Ensuring that these students are able to reach their fullest potential is an inherent part of the National education goals and AMERICA 2000. The National goals, and the strategy for achieving them, are based on the assumptions that: (1) all children can learn and benefit from their education; and (2) the educational community must work to improve the learning opportunities for all children.

¹ While we recognize that the disorders ADD and ADHD vary, the term ADD is being used to encompass children with both disorders.

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This memorandum clarifies the circumstances under which children with ADD are eligible for special education services under Part B of the Individuals with Disabilities Education Act (Part B), as well as the Part B requirements for evaluation of such children's unique educational needs. This memorandum will also clarify the responsibility of State and local educational agencies (SEAs and LEAs) to provide special education and related services to eligible children with ADD under Part B. Finally, this memorandum clarifies the responsibilities of LEAs to provide regular or special education and related aids and services to those children with ADD who are not eligible under Part B, but who fall within the definition of "handicapped person" under Section 504 of the Rehabilitation Act of 1973. Because of the overall educational responsibility to provide services for these children, it is important that general and special education coordinate their efforts.

II. Eligibility for Special Education and Related Services under Part B

Last year during the reauthorization of the Education of the Handicapped Act [now the Individuals with Disabilities Education Act], Congress gave serious consideration to including ADD in the definition of "children with disabilities" in the statute. The Department took the position that ADD does not need to be added as a separate disability category in the statutory definition since children with ADD who require special education and related services can meet the eligibility criteria for services under Part B. This continues to be the Department's position.

No change with respect to ADD was made by Congress in the statutory definition of "children with disabilities;" however, language was included in Section 102(a) of the Education of the Handicapped Act Amendments of 1990 that required the Secretary to issue a Notice of Inquiry (NOI) soliciting public comment on special education for children with ADD under Part B. In response to the NOI (published November 29, 1990 in the Federal Register), the Department received over 2000 written comments, which have been transmitted to the Congress. Our review of these written comments indicates that there is confusion in the field regarding the extent to which children with ADD may be served in special education programs conducted under Part B.

A. Description of Part B

Part B requires SEAs and LEAs to make a free appropriate public education (FAPE) available to all eligible children with disabilities and to ensure that the rights and protections of Part B are extended to those children and their parents. 20 U.S.C. 1412(2); 34 CFR §§300.121 and 300.2. Under Part B, FAPE, among other elements, includes the provision of special education and related services, at no cost to parents, in

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conformity with an individualized education program (IEP). 34 CFR §300.4.

In order to be eligible under Part B, a child must be evaluated in accordance with 34 CFR §§300.530-300.534 as having one or more specified physical or mental impairments, and must be found to require special education and related services by reason of one or more of these impairments.² 20 U.S.C. 1401(a)(1); 34 CFR §300.5. SEAs and LEAs must ensure that children with ADD who are determined eligible for services under Part B receive special education and related services designed to meet their unique needs, including special education and related services needs arising from the ADD. A full continuum of placement alternatives, including the regular classroom, must be available for providing special education and related services required in the IEP.

B. Eligibility for Part B services under the "Other Health Impaired" Category

The list of chronic or acute health problems included within the definition of "other health impaired" in the Part B regulations is not exhaustive. The term "other health impaired" includes chronic or acute impairments that result in limited alertness, which adversely affects educational performance. Thus, children with ADD should be classified as eligible for services under the "other health impaired" category in instances where the ADD is a chronic or acute health problem that results in limited alertness, which adversely affects educational performance. In other words, children with ADD, where the ADD is a chronic or acute health problem resulting in limited alertness, may be considered disabled under Part B solely on the basis of this disorder within the "other health impaired" category in situations where special education and related services are needed because of the ADD.

C. Eligibility for Part B services under Other Disability Categories

Children with ADD are also eligible for services under Part B if the children satisfy the criteria applicable to other disability categories. For example, children with ADD are also eligible for services under the "specific learning disability" category of

² The Part B regulations define 11 specified disabilities. 34 CFR §300.5(b)(1)-(11). The Education of the Handicapped Act Amendments of 1990 amended the Individuals with Disabilities Education Act [formerly the Education of the Handicapped Act] to specify that autism and traumatic brain injury are separate disability categories. See section 602(a)(1) of the Act, to be codified at 20 U.S.C. 1401(a)(1).

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Part B if they meet the criteria stated in §§300.5(b)(9) and 300.541 or under the "seriously emotionally disturbed" category of Part B if they meet the criteria stated in §300.5(b)(8).

III. Evaluations under Part B

A. Requirements

SEAs and LEAs have an affirmative obligation to evaluate a child who is suspected of having a disability to determine the child's need for special education and related services. Under Part B, SEAs and LEAs are required to have procedures for locating, identifying and evaluating all children who have a disability or are suspected of having a disability and are in need of special education and related services. 34 CFR §§300.128 and 300.220. This responsibility, known as "child find," is applicable to all children from birth through 21, regardless of the severity of their disability.

Consistent with this responsibility and the obligation to make FAPE available to all eligible children with disabilities, SEAs and LEAs must ensure that evaluations of children who are suspected of needing special education and related services are conducted without undue delay. 20 U.S.C. 1412(2). Because of its responsibility resulting from the FAPE and child find requirements of Part B, (an LEA may not refuse to evaluate the possible need for special education and related services of a child with a prior medical diagnosis of ADD solely by reason of that medical diagnosis. However, a medical diagnosis of ADD alone is not sufficient to render a child eligible for services under Part B.

Under Part B, before any action is taken with respect to the initial placement of a child with a disability in a program providing special education and related services, "a full and individual evaluation of the child's educational needs must be conducted in accordance with requirements of §300.532." 34 CFR ~~§300.531~~. Section 300.532(a) requires that a child's evaluation must be conducted by a multidisciplinary team, including at least one teacher or other specialist with knowledge in the area of suspected disability.

B. Disagreements over Evaluations

Any proposal or refusal of an agency to initiate or change the identification, evaluation, or educational placement of the child, or the provision of FAPE to the child is subject to the

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written prior notice requirements of 34 CFR §§300.504-300.505.³ If a parent disagrees with the LEA's refusal to evaluate a child or the LEA's evaluation and determination that a child does not have a disability for which the child is eligible for services under Part B, the parent may request a due process hearing pursuant to 34 CFR §§300.506-300.513 of the Part B regulations.

IV. Obligations Under Section 504 of SEAs and LEAs to Children with ADD Found Not To Require Special Education and Related Services under Part B

Even if a child with ADD is found not to be eligible for services under Part B, the requirements of Section 504 of the Rehabilitation Act of 1973 (Section 504) and its implementing regulation at 34 CFR Part 104 may be applicable. Section 504 prohibits discrimination on the basis of handicap by recipients of Federal funds. Since Section 504 is a civil rights law, rather than a funding law, its requirements are framed in different terms than those of Part B. While the Section 504 regulation was written with an eye to consistency with Part B, it is more general, and there are some differences arising from the differing natures of the two laws. For instance, the protections of Section 504 extend to some children who do not fall within the disability categories specified in Part B.

A. Definition

Section 504 requires every recipient that operates a public elementary or secondary education program to address the needs of children who are considered "handicapped persons" under Section

³ Section 300.505 of the Part B regulations sets out the elements that must be contained in the prior written notice to parents:

- (1) A full explanation of all of the procedural safeguards available to the parents under Subpart E;
- (2) A description of the action proposed or refused by the agency, an explanation of why the agency proposes or refuses to take the action, and a description of any options the agency considered and the reasons why those options were rejected;
- (3) A description of each evaluation procedure, test, record, or report the agency uses as a basis for the proposal or refusal; and
- (4) A description of any other factors which are relevant to the agency's proposal or refusal.

34 CFR §300.505(a)(1)-(4).

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504 as adequately as the needs of nonhandicapped persons are met. "Handicapped person" is defined in the Section 504 regulation as any person who has a physical or mental impairment which substantially limits a major life activity (e.g., learning). 34 CFR §104.3(j). Thus, depending on the severity of their condition, children with ADD may fit within that definition.

B. Programs and Services Under Section 504

Under Section 504, an LEA must provide a free appropriate public education to each qualified handicapped child. A free appropriate public education, under Section 504, consists of regular or special education and related aids and services that are designed to meet the individual student's needs and based on adherence to the regulatory requirements on educational setting, evaluation, placement, and procedural safeguards. 34 CFR §§104.33, 104.34, 104.35, and 104.36. A student may be handicapped within the meaning of Section 504, and therefore entitled to regular or special education and related aids and services under the Section 504 regulation, even though the student may not be eligible for special education and related services under Part B.

Under Section 504, if parents believe that their child is handicapped by ADD, the LEA must evaluate the child to determine whether he or she is handicapped as defined by Section 504. If an LEA determines that a child is not handicapped under Section 504, the parent has the right to contest that determination. If the child is determined to be handicapped under Section 504, the LEA must make an individualized determination of the child's educational needs for regular or special education or related aids and services. 34 CFR §104.35. For children determined to be handicapped under Section 504, implementation of an individualized education program developed in accordance with Part B, although not required, is one means of meeting the free appropriate public education requirements of Section 504. The child's education must be provided in the regular education classroom unless it is demonstrated that education in the regular environment with the use of supplementary aids and services cannot be achieved satisfactorily. 34 CFR §104.34.

Should it be determined that the child with ADD is handicapped for purposes of Section 504 and needs only adjustments in the regular classroom, rather than special education, those adjustments are required by Section 504. A range of strategies is available to meet the educational needs of children with ADD.

⁴Many LEAs use the same process for determining the needs of students under Section 504 that they use for implementing Part B.

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Regular classroom teachers are important in identifying the appropriate educational adaptations and interventions for many children with ADD.

SEAs and LEAs should take the necessary steps to promote coordination between special and regular education programs. Steps also should be taken to train regular education teachers and other personnel to develop their awareness about ADD and its manifestations and the adaptations that can be implemented in regular education programs to address the instructional needs of these children. Examples of adaptations in regular education programs could include the following:

providing a structured learning environment; repeating and simplifying instructions about in-class and homework assignments; supplementing verbal instructions with visual instructions; using behavioral management techniques; adjusting class schedules; modifying test delivery; using tape recorders, computer-aided instruction, and other audio-visual equipment; selecting modified textbooks or workbooks; and tailoring homework assignments.

Other provisions range from consultation to special resources and may include reducing class size; use of one-on-one tutorials; classroom aides and note takers; involvement of a "services coordinator" to oversee implementation of special programs and services, and possible modification of nonacademic times such as lunchroom, recess, and physical education.

Through the use of appropriate adaptations and interventions in regular classes, many of which may be required by Section 504, the Department believes that LEAs will be able to effectively address the instructional needs of many children with ADD.

C. Procedural Safeguards Under Section 504

Procedural safeguards under the Section 504 regulation are stated more generally than in Part B. The Section 504 regulation requires the LEA to make available a system of procedural safeguards that permits parents to challenge actions regarding the identification, evaluation, or educational placement of their handicapped child whom they believe needs special education or related services. 34 CFR §104.36. The Section 504 regulation requires that the system of procedural safeguards include notice, an opportunity for the parents or guardian to examine relevant records, an impartial hearing with opportunity for participation by the parents or guardian and representation by counsel, and a

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review procedure. Compliance with procedural safeguards of Part B is one means of fulfilling the Section 504 requirement.³ However, in an impartial due process hearing raising issues under the Section 504 regulation, the impartial hearing officer must make a determination based upon that regulation.

V. Conclusion

Congress and the Department have recognized the need to provide information and assistance to teachers, administrators, parents and other interested persons regarding the identification, evaluation, and instructional needs of children with ADD. The Department has formed a work group to explore strategies across principal offices to address this issue. The work group also plans to identify some ways that the Department can work with the education associations to cooperatively consider the programs and services needed by children with ADD across special and regular education.

In fiscal year 1991, the Congress appropriated funds for the Department to synthesize and disseminate current knowledge related to ADD. Four centers will be established in Fall, 1991 to analyze and synthesize the current research literature on ADD relating to identification, assessment, and interventions. Research syntheses will be prepared in formats suitable for educators, parents and researchers. Existing clearinghouses and networks, as well as Federal, State and local organizations will be utilized to disseminate these research syntheses to parents, educators and administrators, and other interested persons.

In addition, the Federal Resource Center will work with SEAs and the six regional resource centers authorized under the Individuals with Disabilities Education Act to identify effective identification and assessment procedures, as well as intervention strategies being implemented across the country for children with ADD. A document describing current practice will be developed and disseminated to parents, educators and administrators, and other interested persons through the regional resource centers network, as well as by parent training centers, other parent and consumer organizations, and professional organizations. Also, the Office for Civil Rights' ten regional offices stand ready to provide technical assistance to parents and educators.

It is our hope that the above information will be of assistance to your State as you plan for the needs of children with ADD who require special education and related services under Part B, as well as for the needs of the broader group of children with ADD

³Again, many LEAs and some SEAs are conserving time and resources by using the same due process procedures for resolving disputes under both laws.

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who do not qualify for special education and related services under Part B, but for whom special education or adaptations in regular education programs are needed. If you any questions, please contact Jean Peelen, Office for Civil Rights; (Phone: 202/732-1635), Judy Schrag, Office of Special Education Programs (Phone: 202/732-1007); or Dan Bonner, Office of Elementary and Secondary Education (Phone: 202/401-0984).

Appendix C: Description of hospital program

Each subject was admitted to the adolescent unit of Mountain View Baptist Hospital for short-term treatment and/or evaluation of serious emotional, behavioral, or chemical dependency disorders. All children or adolescents were placed in one of five classrooms. Some subjects also had diagnosed developmental problems as well, including speech and language disorders, learning disabilities, mild mental retardation, and/or suspected organic/neurological disorders. In such children or adolescents, the behavioral, emotional, or chemical dependency problem was nonetheless the primary reason for admission.

The classroom placements are explained to illustrate the nature and range of subjects in the study. Each classroom placement was based on the assignment of the primary therapist/counselor to a specific therapeutic educator, with two exceptions. The first exception was that the subjects assigned to this researcher were distributed over the five classrooms. Second, in the state of Alabama, children or adolescents with Blue Cross/Blue Shield Insurance of Alabama must be assigned to a licensed clinical psychologist or a licensed psychiatrist. Thus, two classrooms were assigned to the two licensed clinical psychologists and one licensed psychiatrist with subjects, as appropriate, placed within. The licensed psychiatrist did not maintain a regular caseload as did the other therapists, usually managing only one or two patients at a time, due to other required administrative duties. The remaining classrooms were assigned to the caseload of the following professionals: two licensed professional counselors both with master's degrees in clinical

psychology, one licensed clinical social worker, and a psychologist assistant to the licensed clinical psychologist. Treatment teams were held weekly and supervised by a licensed psychiatrist. In all, there were three different team meetings with the corresponding teachers and therapists in attendance. Also present at each team meeting were representatives from the occupational therapy program, nursing staff, and the chemical dependency program, as appropriate. Although each classroom had a teacher's aide, the aide was not present for the team meetings.

The hospital treatment program and school approach was similar to the program described by Forness (1977, 1978). Generally, psychiatric treatment on the unit was individualized for each child and included a combination of short-term psychodynamic individual and/or family therapy and behavioristic treatment approaches, as appropriate. Each child was seen two to three times weekly by his/her primary therapist and by his/her chemical dependency counselor, if substance abuse had been identified as a problem. Nursing staff used behavioral approaches as outlined in each child's master treatment plan, with an Individualized Education Plan (IEP) included for management of social and academic behavior on the unit. In addition, each child attended some four to six sessions of occupational and recreational therapy each week. The hospital school program was based on individualized instruction in a group setting with behavioristic approaches for motivation and management of classroom behavior. Children attended school from 8:00 a.m. to 1:00 p.m. daily, with physical education and electives being provided later in the day by various disciplines. Some 48-50 children were enrolled in the school at any one time.

As each child/adolescent was admitted to the hospital, parents and/or guardians signed appropriate releases of information. The school liaison subsequently contacted the subject's home school and recorded basic information and behavioral data on past school placements in regular or special classes. Copies of both cumulative and confidential records were requested. Parents and/or guardians also completed the Conners Parent Rating Scale, 48 item version, as part of the admission procedure. Individual intelligence tests were administered using either the WISC-R or the WAIS-R depending on the student's age. Individual achievement tests were also administered using the Woodcock-Johnson Psycho-Educational Tests of Achievement, Part II (Woodcock, 1977). Length of stay averaged 57 days during the study period. Therapeutic educators determined the appropriate educational classroom placement to be recommended upon discharge, in conjunction with the treatment team. The liaison maintained contact with the previous educational placement throughout the subjects' hospitalization, notified the appropriate personnel of discharge, and verbally transmitted recommendations. In addition, a psychological/educational report was completed on all subjects describing test results and making instructional suggestions, including discharge recommendations. When requested, the therapeutic educator and/or liaison and/or director of therapeutic education attended public school IEP meetings or assisted parents in such meetings. The actual classroom placement secured for each child was documented by the liaison at the time of discharge, if a placement decision had been made. In cases where a placement had not been secured prior to discharge, follow-up phone calls were made and/or letters were written by the liaison to the respective schools. Since admissions to

MVBHS represented so many school districts with various nomenclature for special programs, classroom placements were classified using the following categories: special education, regular education and drop-outs. The latter category referred to those students who had dropped out of regular education and/or were attending classes for vocational rehabilitation and/or GED preparation. Private schools were included in the drop-out category to indicate that these students were no longer receiving a public school education. Placement in private schools in this category does not indicate an inappropriate education but rather a personal choice by the parent or student as with GED or vocational rehabilitation training. These groupings also were more appropriate for the subject's data obtained due to the limited sample size.

Appendix D: Woodcock-Johnson Psycho-Educational Battery, Part II, tests of achievement, reading cluster scores by group

Group Number	Subject Number	Score
I (Mild)	01	8.2
	02	12.9
	03	6.6
	04	8.5
	05	9.8
	06	12.9
	07	11.4
	08	12.8
	09	10.9
	10	12.9
	11	10.9
	12	12.9
	13	9.5
	14	12.9
	15	9.1
	16	12.8
	17	10.9
	18	9.5
	19	9.1
	20	4.5
	21	2.0
	22	5.6
	23	5.6
	24	5.6
	25	6.4
	26	8.2
	27	10.1
	28	3.6
	29	12.9
	30	12.9
	31	6.2
	32	12.9
	33	2.1
	34	11.9
	35	9.1

Appendix D (Continued)

Group Number	Subject Number	Score
I (Mild)	36	12.9
	37	11.4
	38	7.3
	Mean Score:	9.4 (9.361)
II (Moderate)	01	8.2
	02	5.8
	03	5.8
	04	5.4
	05	12.9
	06	7.8
	07	11.4
	08	3.6
	09	12.9
	10	9.5
	11	11.4
	12	4.9
	13	7.3
	14	12.9
	15	8.0
	16	8.2
	Mean Score:	8.5
III (Severe)	01	4.9
	02	9.8
	03	5.5
	04	10.9
	05	11.9
	06	4.8
	07	5.4
	08	3.2
	09	7.8
	Mean Score:	7.1

Appendix E: Wechsler Intelligence Quotients for verbal, performance, and full scale scores with means and standard deviation by group

Group Number	Subject Number	Wechsler VIQ	Wechsler PIQ	Wechsler FSIQ
I (Mild)	01	108	102	105
	02	118	124	123
	03	82	95	87
	04	100	98	99
	05	95	104	98
	06	98	102	100
	07	84	84	83
	08	107	108	108
	09	91	98	92
	10	84	109	95
	11	111	109	111
	12	96	98	96
	13	112	93	103
	14	101	108	104
	15	92	108	100
	16	95	102	98
	17	102	115	109
	18	105	100	102
	19	100	117	108
	20	81	81	79
	21	82	90	85
	22	78	80	70
	23	75	86	78
	24	75	104	87
	25	81	88	84
	26	73	86	77
	27	95	78	85
	28	82	90	85
	29	88	81	84
	30	115	123	121
	31	77	81	77
	32	105	93	100
	33	59	55	53
	34	123	124	126
	35	87	85	85
	36	109	90	100
	37	97	110	103
	38	88	114	100
Mean Score:		93.29	98.13	94.82
SD:		14.45	14.77	14.87

Appendix E (Continued)

Group Number	Subject Number	Wechsler VIQ	Wechsler PIQ	Wechsler FSIQ
II (Moderate)	01	95	96	95
	02	75	98	85
	03	83	92	86
	04	70	57	61
	05	94	98	95
	06	84	105	92
	07	103	96	100
	08	81	102	90
	09	88	98	91
	10	105	117	110
	11	105	118	112
	12	98	96	97
	13	86	98	91
	14	98	108	103
	15	89	85	86
	16	84	90	85
Mean Score:		89.88	97.13	92.44
SD:		10.44	13.85	11.79
III (Severe)	01	88	106	96
	02	99	107	103
	03	84	91	86
	04	86	92	88
	05	84	96	89
	06	88	95	96
	07	89	96	91
	08	88	96	91
	09	84	105	92
Mean Score:		86.11	96.44	90.56
SD:		2.15	5.55	3.75

Appendix F: Placement prior to hospitalization form

WISC-R/WAIS-R:VIQ: _____

Conners APRS,

PIQ: _____

Hyperactivity Index: _____

FSIQ: _____

Current Grade Placement: _____

Placement Prior to Hospitalization: (circle appropriate #)

1. The regular classroom. Placement in the regular classroom must be legitimately considered for each child.
2. The regular classroom with itinerant instruction. Supplemental aids and services in the regular classroom should be attempted before a more restrictive setting can be justified.
3. The regular classroom for all academic and nonacademic programs possible and the resource room for the remainder of the activities. _____EC, _____LD, _____EMR
4. Full-time in a special class in a neighborhood school which has nonhandicapped children. _____EC, _____LD, _____EMR
5. Assignment to a special school as close to the child's home as possible.
6. Educational services provided in a nonschool setting such as home, hospital, or institution.
7. Other _____

Appendix G: Results of screening for language disorders, learning disabilities, and mental retardation

Group Number	Subject Number	Psycho-Educational Evaluation Diagnosis Speech-Language Learning Evaluation Diagnosis
I	01	No diagnosis
	02	No diagnosis
	03	Developmental receptive language disorder
	04	No diagnosis
	05	Developmental receptive language disorder
	06	No diagnosis
	07	Borderline intellectual ability
	08	No diagnosis
	09	Developmental receptive language disorder
	10	Developmental receptive language disorder; developmental expressive language disorder
	11	No diagnosis
	12	No diagnosis
	13	Developmental articulation disorder: cluttering
	14	No diagnosis
	15	Diagnosis deferred: request SLLE*
	16	No diagnosis
	17	Diagnosis deferred: request SLLE*
	18	Diagnosis deferred: request SLLE*
	19	Diagnosis deferred: request SLLE*
	20	Borderline intellectual ability
	21	Developmental reading disorder
	22	Specific developmental disorder in the auditory processing area
	23	Borderline intellectual ability
	24	Specific developmental disorder in reading;
	25	Borderline intellectual ability
	26	Borderline intellectual ability
	27	No diagnosis
	28	Developmental receptive and expressive language deficits
	29	No diagnosis
	30	No diagnosis
	31	Borderline intellectual ability
	32	No diagnosis
	33	Mild mental retardation
	34	Developmental reading disorder
	35	No diagnosis
	36	No diagnosis
	37	Diagnosis deferred: request SLLE*
	38	Developmental receptive language deficit

*SLLE - Speech language learning evaluation

Appendix G (Continued)

Group Number	Subject Number	
II	01	Developmental receptive language deficit;
	02	Developmental expressive language disorder; developmental articulation disorder;
	03	Diagnosis deferred: request SLLE*
	04	Mild mental retardation
	05	Diagnosis deferred: request SLLE*
	06	No diagnosis
	07	No diagnosis
	08	Diagnosis deferred: request SLLE*
	09	Diagnosis deferred: request SLLE*
	10	Developmental receptive language disorder
	11	No diagnosis
	12	No diagnosis
	13	Diagnosis deferred: request SLLE*
	14	No diagnosis
	15	Developmental expressive language disorder; developmental receptive language disability;
	16	Diagnosis deferred: request SLLE*
III	01	Receptive language disorder
	02	No diagnosis
	03	Developmental receptive language deficit
	04	No diagnosis
	05	Diagnosis deferred: request SLLE*
	06	No diagnosis
	07	Diagnosis deferred: request SLLE*
	08	Receptive language deficit; severe expressive language deficit:mild
	09	No diagnosis
	10	No diagnosis

*Speech language learning evaluation

Appendix H: Recommendation made by treatment team form

Continuum of least restrictive options

Recommendation Made by Therapeutic Educator at the Time of Discharge:
(circle appropriate #)

1. The regular classroom. Placement in the regular classroom must be legitimately considered for each child.
2. The regular classroom with itinerant instruction. Supplemental aids and services in the regular classroom should be attempted before a more restrictive setting can be justified.
3. The regular classroom for all academic and nonacademic programs possible and the resource room for the remainder of the activities. ___ EC, ___ LD, ___ EMR
4. Full-time in a special class in a neighborhood school which has nonhandicapped children. ___ EC, ___ LD, ___ EMR
5. Assignment to a special school as close to the child's home as possible.
6. Educational services provided in a nonschool setting such as home, hospital, or institution.
7. Other _____

Appendix I: Placement made by home school: telephone formPlacement made by the home school: (circle appropriate #)

1. The regular classroom. Placement in the regular classroom must be legitimately considered for each child.
2. The regular classroom with itinerant instruction. Supplemental aids and services in the regular classroom should be attempted before a more restrictive setting can be justified.
3. The regular classroom for all academic and nonacademic programs possible and the resource room for the remainder of the activities. ___ EC, ___ LD, ___ EMR
4. Full-time in a special class in a neighborhood school which has nonhandicapped children. ___ EC, ___ LD, ___ EMR
5. Assignment to a special school as close to the child's home as possible.
6. Educational services provided in a nonschool setting such as home, hospital, or institution.
7. Other _____

Appendix J: Letter to document post-hospitalization placement form

DATE (YY/MM/DD): RE (LAST NAME, FIRST):

DOB (YY/MM/DD): PARENTS/GUARDIANS NAME:
ADDRESS:

ATTENTION:

Mountain View School Personnel are attempting to follow-up on students that attended our school beginning with the Summer Session of 1988, and the 1988-89 school year. We are specifically interested in what kind of educational placement resulted following their withdrawal from our school. Please check the description of the placement that best describes the educational setting when the student re-entered your school. Please also indicate, where appropriate, the primary educational placement or handicapping condition.

Thank you in advance for your cooperation. There is a self-addressed envelope for your convenience in which you may enclose your reply. If you have any questions, please feel free to call me directly at 543-1241, or call my assistant, Melba Barnes at 546-9265, extension 302.

Karen A. Bowen, M.S., L.P.C.
Director of Therapeutic Education
Mountain View School

Please select one by placing a checkmark after the most appropriate description. Explanation can be found on the attached page:**

Supportive Services Coordinator:

Indirect Education Services Provided in the Regular Program:

Direct Educational Services Provided in the Regular Program:

Resource Room Service:

Special Education Class with Part-time Regular Program:

Self-Contained Special Class:

Public Day School Program:

Private Day School Program:

Public Residential School/Facility:

Private Residential School/Facility:

Homebound/Hospital Program:

Regular Classroom with no Special Education Assistance:

Other (Please Specify):

PLEASE INDICATE PRIMARY HANDICAPPING CONDITION AS DETERMINED BY THE ELIGIBILITY DETERMINATION COMMITTEE:

A. Supportive Services Coordinator

There shall be a designated person within the public education agency to insure that the handicapped student receives service(s) which will enable him/her to be educated satisfactorily in the regular program. Supportive services may include, but are not limited to, the provision of special equipment and supplies, special transportation, services of an aide, counseling, interpreter, tutor, note taker, and others as determined by the IEP Committee.

B. Indirect Education Services Provided in the Regular Program

A consulting staff member assists the regular teacher by meeting periodically for the purpose of adapting the regular class program, in accordance with the IEP, so that the handicapped child can remain in the regular program.

C. Direct Educational Services Provided in the Regular Program

A special education staff member goes into the regular classroom and provides direct educational services to the handicapped student.

D. Resource Room Service

The handicapped student attends the regular program for the majority of the school day, but he/she is scheduled out of the regular class for special education services as needed.

E. Special Education Class with Part-Time Regular program

The handicapped student attends a special education program on a regular school campus in the public education agency for the entire school day.

G. Public Day School Program

The handicapped student attends a publically supported special education day program.

H. Private Day School Program

The handicapped student attends a privately supported special education day program.

I. Public Residential School/Facility

The handicapped student attends a publically supported (24-hour care) special education residential program.

J. Private Residential School/Facility

The handicapped student attends a privately supported (24-hour care) special education residential program.

K. Homebound/Hospital Program

Then handicapped student receives educational services within the home or hospital setting because of long-term physical, mental, or emotional problem which prevents the student from attending school.

L. Regular Classroom with no Special Education Assistance

M. Other: Examples-GED; Vocational Rehabilitation Services (VRS); Student did not return to school; Transferred to another school district; etc.....

Appendix K: Summary form for data

Name of Student: _____ Medical Record #: _____

Age (at time of admission): _____ Sex: _____

Race: _____Caucasian, _____Black, _____Other

Length of Stay: _____ days

Admission Diagnosis: _____

Discharge Diagnosis: _____

Chemical Dependency Diagnosis: _____

Educational Diagnosis: _____

* SLLE Diagnosis: _____

Discharge Medication: _____

*Speech language learning evaluation

VITA

Karen Bowen Dahle was graduated from James Madison University, Harrisonburg, Virginia, in 1976, where she obtained a degree in special education/behavioral disorders. In 1981, Karen was graduated from Radford University in Radford, Virginia, with a masters in clinical psychology.

In addition to her teaching certificate, Karen Bowen Dahle is a licensed professional counselor in the state of Alabama, and is nationally certified by the academy of clinical mental health counselors. The researcher also is a nationally certified school psychologist.

Karen Bowen Dahle is employed by Glenwood Mental Health Services in Birmingham, Alabama, where she is the educational coordinator for Lakeview Day Treatment Program for seriously emotionally disturbed children and adolescents.

A handwritten signature in cursive script that reads "Karen Bowen Dahle". The signature is written in black ink and is positioned above a solid horizontal line.

Karen Bowen Dahle