College success rates of students with Attention Deficit Hyperactivity Disorder
by Vicki Burford Niemantsverdriet

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University

Abstract:
The problem of this study was to determine if there was a difference in the college success rate of students with Attention Deficit Hyperactivity Disorder (ADHD) who were consistent users of student support services and those students with ADHD who were inconsistent users, with college success rate measured 'by grade point average. The sample consisted of students, clinically diagnosed with ADHD, who had contacted one of three student support service centers on two different campuses in Montana: (a) student disabilities center, (b) student health center, and/or (c). student counseling center. A mixed methodology was employed. Quantitative data was analyzed about the grade point averages (GPA) of 44 students. That analysis yielded the conclusion that the mean GPA of students who used accommodations consistently did not differ significantly from the mean GPA of students who used those accommodations inconsistently. Qualitative data was gathered from 30 student interviews exploring how they perceived student services as contributing to their success in college. The primary findings of the qualitative data for this sample were that (a) most students had negative school experiences prior to college, (b) the transition to college was made more difficult by the stigma attached to the diagnosis, (c) usually students did not make a contact with a student service center unless they were in crisis. Furthermore students perceived student services as having a role in developing new organizational and study skills, deciding about and obtaining medication, and maximizing their own internal resources. Students contacted the student service center they thought would most help them with the crisis they were experiencing at the time and did not necessarily initiate the contact because they had ADHD. Most saw student services as contributing to the organization of their internal selves, but they integrated those skills and feelings into their daily lives without the continual assistance from a student service center. The most prevalent finding of both the quantitative and qualitative analyses was that almost all of these students used medication and needed a convenient and affordable way in which to be followed medically.

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by

Vicki Burford Niemantsverdriet

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APPROVAL

of a thesis submitted by

Vicki Burford Niemantsverdriet

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

Dr. Ralph Brigham Ralph A Brigham (Signature) 7-22-98 Date

Approved for the Department of Education

Dr. Gloria Gregg Gloria A Gregg (Signature) 7/22/98 Date

Approved for the College of Graduate Studies

Dr. Joseph Fedock Joseph J. Fedock (Signature) 7/23/98 (Date)

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Date 7/8/98

This paper is dedicated to my mother who was a quilter and taught me that you piece together your life with the materials you've got.

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ABSTRACT

The problem of this study was to determine if there was a difference in the college success rate of students with Attention Deficit Hyperactivity Disorder (ADHD) who were consistent users of student support services and those students with ADHD who were inconsistent users, with college success rate measured by grade point average. The sample consisted of students, clinically diagnosed with ADHD, who had contacted one of three student support service centers on two different campuses in Montana: (a) student disabilities center, (b) student health center, and/or (c) student counseling center. A mixed methodology was employed. Quantitative data was analyzed about the grade point averages (GPA) of 44 students. That analysis yielded the conclusion that the mean GPA of students who used accommodations consistently did not differ significantly from the mean GPA of students who used those accommodations inconsistently. Qualitative data was gathered from 30 student interviews exploring how they perceived student services as contributing to their success in college. The primary findings of the qualitative data for this sample were that (a) most students had negative school experiences prior to college, (b) the transition to college was made more difficult by the stigma attached to the diagnosis, (c) usually students did not make a contact with a student service center unless they were in crisis. Furthermore students perceived student services as having a role in developing new organizational and study skills, deciding about and obtaining medication, and maximizing their own internal resources. Students contacted the student service center they thought would most help them with the crisis they were experiencing at the time and did not necessarily initiate the contact because they had ADHD. Most saw student services as contributing to the organization of their internal selves, but they integrated those skills and feelings into their daily lives without the continual assistance from a student service center. The most prevalent finding of both the quantitative and qualitative analyses was that almost all of these students used medication and needed a convenient and affordable way in which to be followed medically.

CHAPTER 1

INTRODUCTION

At the turn of the twentieth century, it was discovered that there were a number of children who exhibited certain persistent attributes that did not change as they developed and matured. These children exhibited difficulty persisting with tasks that required sustained mental effort, poor organizational skills, poor impulse control, and were sometimes extremely active. They were labeled as having a defect in their moral character (Barkley, 1996). Nearly a century later, we now know that some of those children were probably suffering from a neurological disorder called Attention Deficit Hyperactivity Disorder (ADHD). Only in the past decade has research begun to show that ADHD can continue into adulthood. As the research unfolded, it had rippling effects for adults who pursued a postsecondary education. College and university campuses across the United States have begun to offer a wide range of student services designed to assist those who have this neurological disorder known today to be ADHD.

The services on U.S. campuses for students with ADHD have been created primarily in response to two important statutes as interpreted by the U.S. Department of Education, the Office of Civil Rights, and the courts. The first statute was actually in the form of a memorandum to clarify the status of the diagnosis of ADHD. The Rehabilitation Act of 1973, also known more commonly as the Individuals with Disabilities Education Act (IDEA), was the original statute prohibiting discrimination of persons with disabilities in schools and universities (U.S. Department of Education, 1973). The clarification statement of IDEA as it related to ADHD was issued in 1991 and mandated recognition of ADHD as a condition which could impair one's learning. This statute granted individuals with ADHD eligibility for educational accommodations

under Section 504 (U.S. Department of Education, 1991). A second statute that propelled university campuses into offering services for students with ADHD was the Americans with Disabilities Act passed in 1990. This act protected the legal rights of postsecondary students at both public and private institutions. Primarily as a result of these two statutes, the number of students with ADHD who are enrolling and returning to college has continued to rise (Richard, 1995).

Historically the diagnosis of ADHD has been researched in two arenas: the medical field and the field of education. Because of recent research by neurologists, psychiatrists and clinical psychologists, ADHD is almost universally accepted as having a biological basis (Barabasz & Barabasz, 1996). ADHD interferes dramatically with an individual being able to learn in a traditional classroom setting. Consequently, the literature regarding educational accommodations has grown exponentially in the past six years since ADHD was recognized as a disabling condition under the IDEA act of 1991 (Goldhammer, 1995). The combination of medical and educational research has led to an interesting collaborative effort on college campuses (Quinn, 1994). Of course the medical treatment remains with a physician, but it is generally accepted that this treatment occurs in concert with other services administered by a student disabilities service (Quinn, 1995). The protocols for this service delivery, mandated by the Americans with Disabilities Act in 1990 for college students with ADHD, are still being developed (Nadeau, 1995).

In summary, ADHD is now recognized as a neurological disorder that can impair a student's learning. In 1990, ADHD was included in the Americans with Disabilities Act as a disability that needed to be accommodated under federal law. In 1991, ADHD became recognized as a disability under Section 504 of IDEA ensuring the rights of disabled students in public and private institutions. ADHD is a medical disorder, the

symptoms of which are no more evident anywhere than they are in a traditional learning classroom. Research in both the medical and the educational fields have contributed to the growing knowledge of the best practices in teaching college students who have the disorder.

Statement of the Problem

The problem of this study was to determine if there was a difference in the college success rate of students with Attention Deficit Hyperactivity Disorder (ADHD) who were consistent users of student support services and those students with ADHD who were inconsistent users of student support services, with college success rate measured by grade point average.

This investigation also considered such attribute variables as gender, age, class standing, semester credit load, declared major, whether the student had a co-morbid condition, e.g., a learning disability, and whether the student took medication to diminish symptoms of his ADHD. This study was conducted with all students enrolled at Montana State University-Bozeman and Montana State University-Billings during all or some portion of the academic year 1996-97 who had self-disclosed their diagnosis of ADHD to the university. Each student must have had contact with at least one of three services on the campus: the student disabilities center, the student health center, or the counseling center. This study was investigative in nature and was an ex post facto study of those students with ADHD enrolled during the 1996-97 academic year at these two universities.

Need for the Study

This study is intended to contribute to the research literature in the following ways: (a) by providing an investigation of what types of services college students with ADHD are utilizing, (b) by providing information about what types of student support services are associated with a high success rate for this population, and (c) by providing information to student service offices to assist them in their role of aiding the college student with learning problems.

The recognition of ADHD in adults is a relatively recent occurrence (APA, 1980). Most psychiatrists believed that ADHD diminished and eventually disappeared in adolescence (Wender, 1987). It wasn't until the mid-80's that it became obvious in longitudinal studies that ADHD was not just a childhood disorder (Klein & Mannuzza, 1991). The longitudinal studies demonstrated the fact that some children who had been diagnosed with ADHD were still manifesting symptoms well into young adulthood and beyond. While the focus of interventions for children with ADHD was on improving their achievement in school, it soon became evident that adults with ADHD manifested problems which interfered with their work and continuing educational endeavors (Faigel, 1995).

Much controversy surrounds the diagnosis of ADHD, primarily regarding three issues. First, there is no definitive medical test for establishing the diagnosis of ADHD (see definition of terms). No technological study or laboratory procedure can demonstrate that one does, in fact, have the disorder. The diagnosis is based solely on a number of clinical criteria related to the age of onset, and the duration and intensity of symptoms. While a plethora of medical research has shown evidence of a neurological

and genetic basis to ADHD, there are those who remain skeptical that the disorder exists (Latham, 1995). Second, much controversy surrounds the widespread use of stimulant medication to treat the disorder (Barkley, 1996). Stimulant treatment can be a highly successful intervention for those persons who do, in fact, have the disorder (Quinn, 1995). Many have argued that the medication is too freely dispensed and is being widely abused (Maryland House of Delegates, 1997). Third, controversy surrounds the increased frequency with which the diagnosis is being made (Barabasz & Barabasz, 1996). Prevalence of the disorder generally ranges around 5% for the general population (Barkley, 1990) and in the range of 50% among clinical referrals (Szatmari, Offord & Boyle, 1989). Some argue that through over-use, the diagnosis has become an excuse for irresponsible and impulsive behavior exhibited by young people (Hartmann, 1993).

All three controversies are played out in the ADHD college population. College students have a higher rate of alcohol and drug abuse than the general population (Duncan, 1993). Couple this with the fact that among adults diagnosed with ADHD, 34% to 50% have histories of alcoholism and/or drug abuse or dependence (Shekim, Asarnow, Hess, Zaucha & Wheeler, 1990), and the practice of prescribing stimulant medications for college students with ADHD becomes controversial. Because there is no definitive test for ADHD, the argument is that college students can present otherwise unverifiable symptoms to a physician or licensed mental health professional in order to be diagnosed with ADHD. The diagnosis can then be an entree for them to obtain stimulant medications, and be granted special accommodation in their college classes or a host of other services (APA, 1997). While abuse of this type isn't documented in the literature, student disabilities services offices across the country are adopting protocols in an attempt to prevent it from occurring (Quinn, 1995).

Student disability services, student health services, and student counseling centers are in the role of providing services which promote a student's ability to meet his educational goals, and serving as a synergist for academic policies and procedures which affect students who have ADHD (Sandeen, 1996). Sandeen (1996) also contends that student services offices must balance this advocacy role with their primary goal of supporting the academic mission of the institution.

Definition of Terms

Attention Deficit Hyperactivity Disorder. ADHD is defined by the American Psychiatric Association's Diagnostic Statistical Manual of Mental Disorders, 4th Edition (APA, 1994). Only physicians and appropriate mental health professionals can make the diagnosis. It is not an educational diagnosis, i.e., a teacher is not licensed to diagnose the disorder. It is important in this study that the reader know that a student who receives services on either campus has been diagnosed according to DSM-IV criteria. APA's diagnostic criteria are as follows:

A. Either (1) or (2):

(1) six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

(b) often has difficulty sustaining attention in tasks or play activities

(c) often does not seem to listen when spoken to directly

(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

(e) often has difficulty organizing tasks and activities

(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books or tools)

(h) often easily distracted by extraneous stimuli

(i) often forgetful in daily activities

(2) six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity
(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in other situations in which remaining seated is expected
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly
(e) is often "on the go" or often acts as if "driven by a motor"
(f) often talks excessively
Impulsivity
(g) often blurts out answers before questions have been completed
(h) often has difficulty awaiting turn
(i) often interrupts or intrudes on others (e.g. butts into conversations or games)

B. Some hyperactivity-impulsivity or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder). This diagnosis may be of the combined type (both inattention and hyperactivity); of the predominantly inattentive type; or of the predominantly hyperactive-impulsive type; or may also be coded as being "In Partial Remission." Partial remission means that the individual currently has symptoms but no longer meets full criteria. This note is often added to the diagnosis of ADHD in adults who don't manifest at least six symptoms of inattention, hyperactivity, or impulsivity.

Co-morbidity. This refers to a student with ADHD who also has another psychiatric diagnosis, based on DSM-IV criteria. The additional psychiatric diagnosis would be documented in the student's file, or would be reported by the student.

Consistent user of services. This is a student who avails himself/herself to services

offered by the university's student disabilities center (SDC) in an on-going and regular fashion. A consistent user is someone who:

(1) is seen on an on-going basis at one of the institution's SDC for one semester or more. These visits would be (a) formal visits for an appointed time and purpose, (b) informal chats, "stopping by," (c) using the center's space or equipment to do homework or study on an on-going basis, or (d) to be able to talk informally with a staff person or other students who visit the center.

AND/OR

(2) receives an on-going service delivered on a regular basis for the duration of a semester or more because they have been certified by the university's student disabilities center as having a disability, e.g., they are receiving on-going services for note-taking, test-accommodations, or a distraction-free test-taking environment;

One rater on each campus in the study would determine from the above criteria whether the student would be categorized as a consistent user of services. In addition, in the follow-up interviews, a student will be asked to describe what type of service he/she has used, the frequency of that use, and the context of his/her use (i.e. informal, formal, brief, sustained, etc.)

Disorder. This refers to a cluster of symptoms which occur over time in a consistent pattern.

Full time student. A student who is enrolled at the university and is registered for 12 or more semester credit hours.

Inconsistent user of services. A student who makes contact with the student disabilities center (SDC) in order to address issues of their ADHD but has little or no contact after the initial inquiry would be considered an inconsistent utilizer of services. This student had:

(1) one initial contact, OR
(2) inquired about the service but would not have made use of it, OR
(3) inquired about the service but did not follow through on providing the service center with necessary documentation as evidence that they have been diagnosed with the disorder, OR
(4) not visited the center in a formal or informal manner in order to see staff or other students with ADHD .

One rater on each campus in the study determined from the above criteria if a student was categorized as an inconsistent use of service. In addition, in the follow-up interviews, students were asked to describe what type of service they used, the frequency of that use, and the context of their use (i.e. informal, formal, brief, sustained, etc.).

Learning Disability. This refers to an educational diagnosis made after an individual has

completed a battery of tests to measure whether there is a significant difference between their ability to learn as measured by a test of intelligence quotient and their achievement in school or college as measured by appropriate instruments generally accepted in the field of education.

Nontraditional student. This refers to a college student who is 25 years old or older.

Part-time student. A student who is registered for less than 12 semester credit hours.

Private services. Services, such as tutoring, counseling, clinic visits, or medical care which are arranged by the student independently of the university and for which the student himself/herself is responsible for payment.

Schedule II Drug. A medication prescribed by a physician which requires the patient to be seen physically by the physician. In addition, the prescription for these drugs must be in written form and cannot be called in to a pharmacy to be filled. Also the prescription is not refillable. Ritalin and Dexedrine which are commonly used to treat patients with ADHD are both Schedule II drugs.

Semester Credit Load. The number of credit hours that a student carries during a term.

Stop out. A student who was enrolled in any university or institution of higher learning, but was not continuously enrolled for two or more consecutive academic terms.

Student Resource Center. In the literature, this service is often referred to as student disabilities services.

Traditional student. This refers to a college student who is less than 25 years of age.

Questions to be Answered

(1) What types of accommodations are used most frequently by students with ADHD?

(2) Is there a significant difference between the mean GPA of students who utilize accommodations consistently and the mean GPA of students who utilize accommodations inconsistently?

(3) Are there differences in the service utilization rates when categorized by age (traditional or nontraditional), gender, and class standing (F, S, J, Sr)?

(4) Do the rate of service use and the student's use of medication interact on college GPA?

(5) What proportion of variability in college GPA can be explained by semester credit load, use of medication, and rate of service utilization?

(6) How do students perceive the student services they receive as contributing to their college success?

(7) What are the reasons students who self-report they have ADHD do not seek campus services?

Literature Review

The disorder we refer to today as Attention Deficit Hyperactivity Disorder (ADHD) first appeared in the literature in 1902 and was described as a defect in one's moral character (Barkley, 1996). Barkley (1996) chronicled the research over the past century by describing the evolution of nomenclature for the disorder. His account reflected the conception held for nearly four decades that the behavior was a result of a

physical insult to the brain, e.g., post-encephalitic, or brain injury. From the 1950's through the 1970's, children who manifested impulsivity and hyperactivity were considered to have some minimal brain damage or dysfunction. It was during the 1960's that the term hyperactivity came to be associated with this particular cluster of symptoms. In 1980 a manual used to define and categorize the criteria for mental disorders (American Psychiatric Association, 1980) included for the first time the diagnosis of Attention Deficit Disorder. Since then two more editions of the manual have been published and each reflected several terminology and criteria changes (American Psychiatric Association, 1987; American Psychiatric Association, 1994). As currently defined by APA, the disorder is the measure of the intensity, persistence, and patterning of three particular characteristics: (1) inattention (2) hyperactivity, and (3) impulsivity (Wender, 1987; see also APA, 1994).

Historically ADHD has been considered to be a childhood disorder (Javorsky, 1994). Much of the literature has focused on the management of ADHD in children because it was thought for so long that it was a disorder confined to children. Particular attention has been placed on the management of the child with ADHD in the classroom (Zentall, 1993). There is a virtual plethora of recent articles and books written about the educational challenges of children with ADHD in elementary and secondary educational settings (Barkley, 1990). Longitudinal studies have now provided evidence that ADHD can persist into adolescence and adulthood (Klein, 1991).

In addition to the literature base about ADHD in the field of education, there is a parallel literature base in the field of medicine, specifically in neurology and psychiatry.

There have been numerous studies uncovering the genetic basis for ADHD, as well as discussing the use of medication in treating the disorder (Barkley, 1990). Barkley also stated that in the past 90 years, ADHD has been the focus of over 2,000 research studies (1990). A recent symposium on ADHD at the American Psychiatric Association's annual conference (San Diego,1997) focused on the recognition of ADHD as a condition which can persist into adulthood and how treatment considerations might be different for adults than for children. At this symposium Dr. Dennis Charney (1997) stated that there is relatively little research on ADHD in adolescence and adults and yet, given the rapidly expanding knowledge of brain systems involved in learning, memory, and attention, the field of medicine is on the threshold of important new discoveries in diagnosing and treating adults with ADHD.

Castellanos (1997) summarized some of the research about the neurological etiology of ADHD. It appears that there may be an excess of dopamine in the brain of persons with ADHD. Dopamine is a neurotransmitter, or brain messenger. High levels of dopamine metabolites are associated with hyperactivity. This excess causes a dysfunction of the "brain's braking system" (p. 34). The brain's braking system refers to the executive functions of the brain that help individuals delay their responses to a situation long enough to stop and think about what they are about to do. These functions also help with the abilities to prioritize, organize, and strategize.

The advances in research in both the medical and educational fields have played a major role in another development in relation to ADHD. A major impetus for research of ADHD in college populations came in 1991 when the U.S. Department of Education

recognized ADHD as a handicapping condition under Section 504 of the Rehabilitation Act of 1973 (U.S. Department of Education, 1991). This act protected the rights of students with handicaps to appropriate and reasonable accommodations at the elementary, secondary, and postsecondary levels. As more kindergarten-through-twelfth-grade students with ADHD received educational and medical treatment, more of them matriculated to college (Javorsky & Gussin, 1994). As the research began to unfold and evidence of the disorder was found in adolescents and adults, the literature began to focus on appropriate interventions at the postsecondary level (Richard, 1995).

The interventions are customized for each person, but several are regarded as customary protocol for treating adults with ADHD: (a) medication management for those who use medication, (b) psychoeducation, (c) environmental engineering, and (d) various types of therapy (Ratey, Hallowell, & Miller, 1997). Medication management is conducted by a physician who monitors the patient's functioning and possible side effects of the medication. Psychoeducation refers to educating the person with ADHD about the disorder via therapeutic sessions, books, articles, and other media. A national organization, Children and Adults with Attention Deficit Disorder (CHADD), has local chapters and publishes a quarterly magazine for persons with ADHD to keep them informed of new research about ADHD. CHADD is extremely instrumental in providing psychoeducation of persons with ADHD. Ratey et al (1997) referred to environmental engineering as those things that help the individual structure and organize their environment, e.g. daily planners, lists, tape recorders, structured work/study areas, and built-in routines. Therapy for persons with ADHD, according to Ratey et al, can

sometimes take a different bent than the usual insight-oriented, open-ended therapeutic hour used in conventional psychotherapy. Just as their lives need more structure, the therapy for persons with ADHD is often more structured. Often times in treating adults with ADHD, the therapist is more directive, asking practical questions, and acting almost as a coach. Ratey et al (1997) describe coaching as "providing external guidance, reminding them of consequences of impulsive behaviors and other self-defeating patterns" (p. 586). Eventually someone else may act as their coach, or the persons may learn to coach themselves. Saravia-Cornelius (1994) also talked about this in her thesis where students developed ways to cope with their impulsivity and inattentiveness, e.g. not doing anything before finishing their school work, and rewarding themselves for goal accomplishment. The last type of therapy that Ratey et al discussed was long-term therapy to help the persons rebuild their character and "remedy their maladaptive coping styles and self-defeating behaviors" (1997, p. 586).

It has been in the past decade that research has begun to show the long-term effects of ADHD as they relate to educational levels. The prevalence of ADHD among the college population has not been reliably determined, though most authors cited Barkley's work (1993) which concluded that the college population prevalence was slightly less than that of the general population i.e., 1% to 3% as compared to 3% to 5%. Mannuzza (1993) and Weiss et al (1986) both concurred that adults with ADHD achieved less formal education than did control groups. Mannuzza (1993) found that twelve percent of those adults with ADHD had obtained a bachelor's degree or higher versus almost half of the control group ($p < .0001$). In the past 5 to 8 years, a literature base has

begun to emerge addressing students with ADHD who attend college, although most authors agree that there is a general paucity of research regarding the college population with ADHD (Sharma, 1997; Bramer, 1994; St. James, 1995). Sharma (1997) contends that educators have had little basis for addressing the needs of students with ADHD in higher education and that andragogical assumptions have had to be drawn from pedagogical literature.

Some research has focused on the transition process from high school to higher education and ways to prepare oneself for the demands of postsecondary settings (Quinn, 1994; Brinckerhoff, 1996; Halperin, Yovanoff, Doren & Benz, 1995). Other authors have focused on the role of self-advocacy for college students with ADHD (Bramer, 1996). For the most part, colleges have accommodated students with ADHD by extending or adapting the programs that were offered to students with learning disabilities (Richard, 1995; Javorsky & Gussin, 1994). It is estimated that about 25% of students with a primary diagnosis of ADHD also have a learning disability (Semrud-Clikeman et al, 1991; Barkley, 1996). Many of the learning problems of students with ADHD mimic the problems of those students with a learning disability, i.e., failure to organize, lack of persistence, coordination problems, and failure to achieve in spite of average or above average intelligence (Wender, 1987). Barkley (1996) particularly emphasizes that ADHD is a problem with persistence. Because the learning problems of students with ADHD are similar to those of students with a learning disability, many of the services offered to them on college campuses are similar: tutors, readers, additional academic advising, reduced course loads, computer labs, and study skills classes (Keim, McWhirter

& Bernstein, 1996). While these same authors (1996) looked primarily at the academic success of college students with a learning disability, they recapitulate the need for further study of the relationship between the types of services offered to students with learning difficulties and the actual success of these students in college.

Another issue addressed in recent literature about college students with ADHD emphasized unrecognized or previously undiagnosed ADHD (Heiligenstein & Keeling, 1995). These authors contend that students who had previously compensated for educational difficulties with the support and structure offered by their families often found themselves unable to meet the organizational demands of college. These students turn to student support services asking for help in making their way through the academic maze. Most authors agree that diagnosing and treating ADHD in college students can be accomplished best with a combination of tools: a comprehensive interview with an appropriate professional, questionnaires, formal academic testing, and corroborative information verifying an educational history which reflects the condition, even if it has not been formally diagnosed previously (Quinn, 1995; Heiligenstein & Keeling, 1995; Nadeau, 1995; Faigel, 1995; Ward, Wender & Reimherr, 1993).

In relation to this, an article was published while this current study was underway. In January, 1998, Heiligenstein, Conyers, Berns, and Smith published their study of 468 students assessed for symptoms of ADHD. According to the present DSM-IV criteria, a person must exhibit 6 out of 9 inattention symptoms, and 6 out of 9 hyperactive-impulsive symptoms in order to be diagnosed with ADHD (See Definition of Terms). These authors suggested cutoff scores of 4 rather than 6 symptoms in each category in

order to make the diagnosis in college students. In other words, they found that the degree of ADHD symptoms within college students was relatively modest, and they suggested lowering the thresholds for classifying ADHD in college students. This reaffirms the work done by Dr. Barkley who contended that DSM-IV criteria was developed for children and failed to recognize that the condition continued into adulthood (1996).

Other recent literature that has emerged about college students with ADHD deals with the psychosocial stressors of the condition. Dooling-Litfin (1996) examined the emotional distress in college students with ADHD. The results of that study showed that emotional distress, especially hostility, obsessive-compulsive, and anxiety scales were significantly related to the presence of ADHD symptoms. Sharma (1997) identified the differences in personality types and learning styles of college students with ADHD in an effort to examine those two entities in relation to learning strategies.

In a study of coping strategies in college students with ADHD, one author examined how the prevalence of ADHD symptomatology affected students' use of college support services (Saravia-Cornelius, 1994). Saravia-Cornelius found that the high ADHD prevalence group used the counseling center more often than did the low prevalence group, and the low prevalence group used the career center more. Saravia-Cornelius had 71 subjects in her study, however, only five had been clinically diagnosed with the disorder. She suggested that future studies be conducted with students who had been formally diagnosed with ADHD.

Another author found in her qualitative study that most college students with ADHD did not seek out support services or did not know they existed (Bramer, 1994). She used case analyses of the college experience of seven adults. None of her subjects were in college at the time that she interviewed them and she felt her data was limited by the time lapse between the subject's college experience and the time of data collection. She suggested using more subjects, using subjects who were diagnosed by more than one clinician, and using subjects who attended same or similar types of institutions.

Kathleen Nadeau in her book (1994) about survival skills for college students with ADHD or a learning disability gave this advice: (a) choose your college carefully, paying attention to math, foreign language, and senior thesis/project requirements; (b) use available accommodations and strategies, such as extended test taking time, priority registration, note-takers, and making sure professors know who you are; (c) get academic counseling and career guidance from someone who is familiar with ADHD; (d) seek out medical consultation, counseling, and tutoring; and (e) learn to help yourself by developing skills for studying, organizing, managing your time, and self-advocacy.

In summary, there is evidence that ADHD is a chronic condition no longer restricted to childhood. In addition, more students with learning problems are making their way to college as they have received earlier interventions both in the education and medical arenas. The symptoms of ADHD closely approximate the learning problems experienced by students with a learning disability, and in fact, 25% of students with ADHD have a co-morbid condition of a learning disability. On most campuses, the services offered to college students with ADHD are of a similar nature to those services

offered to students with a learning disability. College students with ADHD who seek help are usually offered a customized array of services which could include medication management; accommodations such as time-and-a-half for taking exams and priority registration; academic and career counseling; tutoring; therapy; and skill development for studying, time management, and self-advocacy.

CHAPTER 2

METHODOLOGY

Theoretical Framework

The profession of student services has an interdisciplinary framework for its theory base. Student services in higher education draws its knowledge generally from anthropology, sociology, psychology, business management, and education (Komives, Dudley, & Asso., 1996). In this particular study of college students with ADHD, research from the field of medicine will also be used. There are three primary theories that form the basis for this study:

(a) the research on ADHD in adults and especially the writings of R. Barkley;

(b) college student development theory as pioneered by A.W. Chickering, and advanced by P.M. King; and

(c) the concepts developed by L. Baird as a result of the research on higher education student populations done by Pascarella & Terenzini (1991) and Astin (1993).

Barkley (1996) discusses the diagnosis of ADHD as being focused on the wrong parameters. Rather than seeing inattention as the primary symptom, Barkley views the disorder as a problem with self-regulation, impaired cross-temporal organization of behavior, impaired direction of behavior towards the future, and diminished social effectiveness and adaptation. Impairment of these functions translates into learning problems due to lack of organization, lack of working memory, and lack of persistence for students with ADHD who matriculate.

In 1993 Chickering and Reisser described seven vectors of development through which a college student moves. They are as follows: (a) developing competence; (b) managing emotions; (c) moving through autonomy toward interdependence; (d) developing mature interpersonal relationships; (e) establishing identity; (f) developing purpose; and (g) developing integrity (taken from Evans, 1996). This current study of college students with ADHD lies primarily in the first vector, developing competence intellectually, and the third vector, moving through autonomy toward interdependence. The researcher is grounded in the humanist orientation to higher education in which learning focuses on the integration of physical, cognitive, affective, and spiritual dimensions of the learner. One's inner and outer worlds become connected in this process of integration. King and Magolda illustrate this process in their article about a developmental perspective on learning (1996). They suggest that:

> People not only organize but reorganize what and how they know. . . .How individuals construct knowledge and use their knowledge is closely tired to their sense of self. . .The process by which individuals attempt to make meaning of their experiences improves in a developmentally related fashion over time. . . Educators who endorse these (above) principles will use a broad definition of learning that encompasses both cognitive and personal development and that is sensitive to the developmental issues underlying the process of education (pp.165-167).

A third theory base, drawn from research on student outcomes, is described by Leonard Baird (1996). He integrates the work done by Pascarella & Terenzini (1991), Astin (1993), King (1994), and Boyer (1987) to propose some new agendas for the profession of student services. Baird describes four reconceptualizations of the traditional view of how college students grow and learn, and the subsequent consequences for the practice of student services. Baird's reconceptualizations are as follows: a) student populations are viewed as diverse; b) institutions of higher education are viewed as

dynamic and having a multitude of environments; c) student outcomes are viewed as being individualized; and d) the understanding of students and the culture of an institution is reached through both quantitative and qualitative research. It is the intent of this research to provide the field of student services with information which will identify service utilization patterns and provide some measure of the association between services and degree of success by students with ADHD.

Population and Sampling Procedure

The population for this study was comprised of all full-time students who have ADHD and were enrolled as undergraduates at Montana State University-Bozeman and Montana State University-Billings during the 1996-97 academic year. The sample was comprised of those students with ADHD who self-disclosed to either the student disabilities center, the student health service, or the student counseling center that they have the disorder.

This study controlled for six contaminating or extraneous variables. These variables included: (a) students who self-disclosed that they have ADHD but had no documentation of the disorder, (b) co-morbidity of other psychiatric disorders, (c) the fact that more males are diagnosed with ADHD than are females, (d) local history, (e) differences in GPA in different disciplines/colleges, and (f) number of earned credit hours.

The first potentially confounding variable in this study were those students who reported themselves to have ADHD when they had not been diagnosed by an appropriate professional (APA, 1997). Some authors have developed self-check lists

which are designed to help adults decide if they may have the symptoms of ADHD (Weiss, 1992; Barkley, 1991; Copeland, 1989). These checklists are to be used as a screening tool, much like a blood pressure check might alert one to the need for further medical evaluation. Only those students who have had contact with one of the three student service centers (student disability services, counseling center, or student health center) were included because those centers either have professionals who are qualified to make the diagnosis or have verification from a qualified professional as evidence of the student's ADHD. Furthermore, special accommodations, such as extended test-taking time and note-taking, can be granted only if a student has a certification card issued by the student disabilities center. This card can be used by a student to negotiate the appropriate accommodations for a particular course. Saravia-Cornelius had 71 subjects in her study of college students, but only five of them had been clinically diagnosed as having ADHD. Her recommendations for further study included using a sample of adults who had been formally diagnosed with the disorder. That suggestion was integrated into the current study. Thus, to control for the extraneous variable that students may be "self-diagnosed," this study collected data only on those students who had been diagnosed as having ADHD by a licensed and qualified professional.

A second potentially contaminating variable was the co-morbidity of other psychiatric disorders, such as depression or anxiety. It is estimated that up to 30% of people with ADHD may have an anxiety disorder or depression as well (Barkley, 1996; Biederman, Newcorn, & Sprich, 1991; Pliszka, 1992). While anxiety disorders are generally regarded as a separate disorder, there may be some correlation between

depression and ADHD (Barkley, 1996). Barkley and others believe that a trail of misjudgments and poor school performance can lead to depression in some adults. To control for psychiatric disorders which were concomitant with ADHD, this study asked students to self-report whether they were receiving treatment for a co-morbid psychiatric condition. It follows that a student who has a major depression seeks out different services than a student who has trouble learning because of ADHD. Ferreting out which condition was more disabling for those students who had a co-morbid diagnosis was a clinical judgment in many cases. The best control this study had for this variable was to note the co-morbidity without any determination of which condition was more disabling. In the follow up interview, students with co-morbidity were asked in which domain they perceived their greatest challenges.

Another extraneous variable was the fact that males out number females by 3:1 in the general ADHD population and anywhere from 6:1 to 9:1 in a clinical population (Barkley, 1996). To control for this difference in prevalence, gender was built into the research as an independent variable.

An additional potentially contaminating variable was that of local history on one of the campuses in the study. In the 1996-97 academic year, the student health service on one campus employed a psychiatrist who saw students for ADHD and prescribed medication. That psychiatrist was employed for only the first semester of the 1996-97 academic year and left the campus mid-year. The possibility existed that more students were identified as having ADHD and prescribed medication when a psychiatrist was available on campus. In addition, that psychiatrist did not always require students to

produce corroborative evidence of the disorder from their childhood, a necessary criteria for the diagnosis according to the DSM-IV. To control for this variable of local history, an examination of the raw numbers of students who were newly diagnosed with ADHD during the 1996-97 academic year was made. Another way to control for this local history was to include another university, Montana State University-Billings, in the study which did not employ a psychiatrist.

The researcher also considered using a different academic year in which to retrospectively examine the same data, however, because the methodology called for both quantitative and qualitative data, it was decided that the more recent the college experience of the students, the more accurate the qualitative data would be. Bramer (1994) wrote a thesis using case analyses of the college experiences of seven adults diagnosed with ADHD. None of her subjects were in college at the time that she interviewed them and she felt her data was limited by the time lapse between the subject's college experience and the time of data collection. She suggested using more subjects, using subjects who were diagnosed by more than one clinician, and using subjects who attended same or similar types of institutions. Bramer's suggestions were integrated into the current study.

The contaminating variable of the differences in average GPAs among disciplines/colleges is one that was taken into account. The researcher obtained the students' majors from the aggregate information provided by the student service centers and during the follow up interview. In an examination of those lists, any clusters of disciplines/colleges that emerged were noted.

The last confounding variable that was controlled for was that of credit load. Both campuses are on the semester system. A full time undergraduate student is one who carries 12 or more credits in a semester. A part-time student is one that carries less than 12 credits in a semester. This variable was controlled for by including it as an independent variable. The decision was made to use earned credit hours, rather than attempted credit hours because a student's GPA is based on earned credit hours.

Questions and Null Hypotheses

1. What types of services do students who have ADHD utilize?
2. The mean GPA of students who are consistent utilizers of services does not differ significantly from the mean GPA of those students who are inconsistent utilizers.
3. There are no differences in service utilization rates when categorized by age (traditional or nontraditional), gender, and class standing (F,S,J,Sr).
4. The rate of service utilization and the student's use of medication do not interact on college GPA.
5. What proportion of the variability in college GPA can be explained by rate of service utilization, use of medication, and semester credit load?
6. How do students perceive the student services they receive as contributing to their college success?
7. What are the reasons students who self-report they have ADHD do not seek campus services?

Explanation of Investigative Categories

The investigation of the success of ADHD students enrolled during the 1996-97 academic year at two Montana State University campuses was conducted on a number of independent variables. These included: a) age: non-traditional student coded as 1 and traditional student coded as 0; b) gender: males coded as 1 and females coded as 0; c) class standing: coded as 0 for lower division for freshmen and sophomores, and coded as 1 for upper division for juniors and seniors; d) rate of service utilization: consistent coded as 1, and inconsistent coded as 0; e) the presence or absence of a co-morbid condition: presence coded as 1, and absence coded as 0; f) whether or not the student takes medication for his ADHD: takes medication coded as 1, and takes no medication coded as 0, and g) course credit load: full-time student coded as 1, and part-time student coded as 0.

Methods of Data Collection

The data for this investigation was collected using three methods: (a) aggregate information from three student service centers (student disabilities center, student counseling center, and student health center); (b) individual record reviews conducted by the three student service centers; and (c) student interviews. Data was collected in the form of aggregate numbers from the student disabilities center, the student counseling center, and the student health service at both campuses for the academic year 1996-97. This method supplied such data as the number of students with ADHD who used the service that year, identification of the most frequently used services, and the mean GPA

of students with ADHD. The aggregate numbers were broken down by gender, age, and class standing.

Individual record reviews were conducted by the student resource center which provided information on the rate of utilization by an individual, the student's GPA, whether he/she was a full-time or part-time student, whether or not he/she had a co-morbid condition, whether or not he/she took medication, and whether he/she was a consistent or inconsistent user of services.

The last method of data collection was a structured interview. Qualitative interviewing can take many forms. For purposes of this study, the general interview guide approach was utilized (Patton, 1990, p. 280-290). The interview guide is a list of questions or issues that is explored with the student. This guide insured that basically the same information was obtained from a number of people covering the same material. In the interview guide model, the interviewer remained free to ask additional questions spontaneously, and to use a conversational style, however, the focus of the interview was predetermined. The interview for this study took place only after the student agreed for the service center to release his or her name to the researcher. Each service center was asked to distribute a letter to the students they serve who have ADHD. The letter explained the purpose of the investigative research and requested that the student allow his or her name to be released to the researcher for a follow-up interview. Whenever possible, the follow-up interview was conducted in person, using the interview format(See Appendix B, Questionnaire A). Because some of the interviewees had graduated, transferred, or dropped out, some interviews had to be conducted by phone. This was done only if it was not possible to conduct the interview in person. There is some support in the literature to gather data under whatever circumstances present themselves (Patton, 1990, p. 333-335). The interview allowed the researcher to

triangulate the data by verifying information already collected on the student, e.g. GPA, use of other services, and rate of service utilization (See Appendix A, Consent Form C). The interview also served to gather data that wasn't recorded in the student disabilities center's records. This included the students' perceptions of their use of student services, their understanding of what contributes towards their college success, and also why some students with ADHD chose not to use services.

Description of sample

Those students included in the study had a clinical diagnosis of ADHD and had sought the help of at least one of three campus service centers: the student disabilities office, the student health service, or the student counseling center. This study was investigative in nature and exemplified an ex post facto study of undergraduate students with ADHD enrolled at Montana State University-Bozeman and Montana State University-Billings during the 1996-1997 academic year.

Although the two campuses are part of the same university system, they have some divergent characteristics. The following table illustrates the comparison:

Table 1. Comparison of MSU-Bozeman and MSU-Billings General Population

	MSU-Bozeman	MSU-Billings
'96-'97 undergraduate enrollment	10,177	3,192
Percent male	55.9	35.5
Percent female	44.1	64.5
Percent that live on campus	37.3	11.3
Percent that live off campus	62.7	88.7
Average GPA of undergrads for '96-'97	2.74	2.87
Percent of undergrads who are part-time	12.8	27.4
Percent of undergrads who are full-time	87.2	72.6
Average age of undergrad students in the '96-97 year	22.4	26.1

In the previous table, the different milieu of each campus is easily seen. MSU-Bozeman is in a town of 30,000 and is the major employer in the Gallatin Valley, a place known for its mountain recreational opportunities. MSU-Billings on the other hand is in the largest city in Montana with a population of 100,000. Billings is also home to a technology college and one private four-year accredited college. MSU-Bozeman has an enrollment of undergraduates over three times larger than MSU-Billings. MSU-Billings is regarded as more of a commuter school with over eighty-eight percent of its students living off campus. MSU-Bozeman requires entering freshmen to reside on campus.

For purposes of this study, the students were grouped differently depending on whether full, verifiable records were available about them. The students who were

requested to take part in the study were contacted by the following service centers: (a) 44 students who qualified for disability accommodations from the student disabilities center, (b) an additional 33 students who contacted the student disabilities center but did not receive accommodations, (c) 30 students from the student health services, and (d) 3 students from the student counseling centers. The total number of students who were contacted was 110. Of those, data for the 44 who qualified for disability accommodations through the student disabilities center was analyzed quantitatively from the data provided by that center. Of the 110 students contacted, 38 from all three of the centers agreed to be interviewed, but only 30 actual interviews were conducted (See Appendix B, Questionnaire A). Some interviews could not be conducted because the researcher was unable to arrange for an interview due to phones being disconnected, students not having phones, or messages not being returned. Those students who could not be reached by phone were contacted by mail, giving them the option to call the researcher or to fill out an enclosed questionnaire with a stamped, addressed envelope to the researcher (See Appendix B, Questionnaire B). Students who agreed to an interview were offered one raffle ticket in a drawing for dinner for two.

The initial mailing included all 110 students (See Appendix A, Consent Form A). A second mailing was conducted with all students who did not respond to the first one. The counseling centers chose to first make a personal contact with students (by phone or in person), rather than send a letter to the student and risk violating the confidential nature of the fact that the student had visited the counseling center (See Appendix A, Consent Form B).

The interviews were then conducted with students who had self-disclosed that they had ADHD, but who may or may not have received services from one or more of the campus service centers (student disability center, student health service, and/or student counseling center). Some students utilized more than one campus service center. There was no control for the overlap in the service centers because the names of students who were being contacted for the study were not released among the campus service centers.

The purpose of the interview was to gather information about how and why students did or did not utilize services. Seventeen of the interviews were conducted in person in a private room on one of the campuses. Four students asked the researcher to come to their homes to conduct the interview and four others requested meeting at a public place such as a restaurant or the student union. Five of the interviews were conducted by phone because the student lived in another state or asked to do the interview over the phone.

Setting up interviews was difficult. Due to the nature of the disorder, some students had difficulty remembering the interview time and did not show up. Those interviews were rescheduled, sometimes more than once. The researcher made reminder calls to each interviewee the night before the interview was to take place. The researcher often left several messages on answering machines or with spouses/roommates/ fraternity/sorority mates before talking personally with the student to arrange for an interview. The researcher was careful to leave a message that would not violate the confidential nature of the study. All interviews were tape-recorded except for those conducted in a public place or over the phone. In those interviews that could not be

recorded, the researcher took notes during the interview, clarifying quotations, and expanding on the notes immediately after the interview.

The statistical analysis was conducted only on the forty-four students who qualified for disability accommodations. The researcher made this decision for several reasons: (a) the information on all variables to be analyzed quantitatively were available only on those 44 students, (b) the researcher did not have to rely on self-report of GPAs from these students, (c) these students had documentation of having ADHD and the researcher did not have to rely on self-report of having ADHD, (d) the accommodations used by these forty-four students were documented in the student disabilities offices, and (e) the criterion for categorizing a student as a consistent/inconsistent utilizer of services could be uniformly applied to each of the forty-four students as determined by one rater on each campus. Confidentiality restrictions limited the information available to the researcher from the student health services and the student counseling centers. Only the student's name, address, and phone number was released from these centers. Neither the student health services nor the student counseling centers keep a student's transcript as a part of the student's record.

All 110 students were requested to participate in an interview because the qualitative analysis required information to be gathered about students who had made a contact with one of the student service centers, but who may or may not have received any services. The qualitative analysis included students who had not received services because the study also wanted to ascertain why students with ADHD had decided not to use the service.

Defining a Student's Rate of Service Utilization

Individual students were categorized as a consistent or inconsistent utilizer of services. A consistent utilizer of services was a student who availed himself of services offered by the university's resource center, student health center or counseling center in an on-going and regular fashion. A consistent utilizer was someone who:

(1) was seen on an on-going basis at the institution's student disabilities center for one semester or more. These visits were (a) formal visits for an appointed time and purpose, (b) informal chats, "stopping by," (c) using the center's space or equipment to do homework or study on an on-going basis, or (d) to be able to talk informally with a staff person or other students who visit the center; AND/OR

(2) received an on-going service delivered on a regular basis for the duration of a semester or more because they had been certified by the university's student disabilities center as having a disability, e.g., they were receiving on-going services for note-taking, test-accommodations, or a distraction-free test-taking environment.

One rater on each campus in the study determined from the above criteria whether the student was categorized as a consistent user of services. In addition, in the follow-up interview, a student was asked to describe what type of service he/she used, the frequency of that use, and the context of his/her use (i.e. informal, formal, brief, sustained, etc.). This allowed the researcher to triangulate the student's perception of his/her rate of use with the service center's categorization of the student's rate of use. If the student's perception and the service center's reports differed as to whether the student was a

consistent or inconsistent utilizer of services, the researcher was obligated to count that student as a consumer of services that could not be categorized.

An inconsistent or sporadic utilizer of accommodations was a student who made contact with a student services office in order to address issues of his ADHD but had little or no contact after the initial inquiry. This student: (a) had one initial contact inquiring about the service but did not follow through on providing the service center with necessary documentation as evidence they had been diagnosed with the disorder; OR (b) had not contacted or visited the center in a formal or informal manner in order to see staff or other students with ADHD. One rater on each campus in the study determined from the above criteria if a student was categorized as an inconsistent use of service. In addition, in the follow-up interviews, each student was asked to describe what type of service he/she has used, the frequency of that use, and the context of his/her use (i.e. informal, formal, brief, sustained, etc.).

The reliability of categorizing a student as a consistent or inconsistent utilizer of accommodations was further bolstered by the fact that the raters in the student disabilities centers also provided the researcher with the data about the number of accommodations that students used, as well as the number of contacts. The researcher categorized the students as consistent/inconsistent independently of the rater, and then consulted with the rater to determine the categories. Only one change was made in this independent rating and that was in relation to two students who had little contact with the student disabilities

center during the 1996-97 academic year, but had used the services of the center heavily in the previous two years.

Researcher Credibility

In qualitative inquiry, the researcher is an instrument and thus the reader should know the researcher's qualifications and background in order to establish credibility (Patton, 1990, p 472-477). The researcher/interviewer is a licensed clinical therapist who has done therapy with children, adolescents, and adults for over 20 years. In addition, some of those years were spent working at clinics in St. Paul, and Minneapolis, MN, as part of an interdisciplinary team that assessed children and adolescents for ADHD. This study was funded totally by the researcher.

Reliability

Over 90% of colleges and universities use the five-letter grading system to rate their students (Milton, Pollio, & Eison, 1986). These same authors challenge the reliability of cumulative GPA as a measure of college success, however, they do not propose any other more reliable method of measure.

The reliability of the diagnosis of ADHD can also be challenged if one regards reliability as a measure of stability over time. The diagnosis of ADHD has undergone changes in both nosology and nomenclature over time. The current criteria as stated in the DSM-IV (APA,1994) are the best criteria available to the field of medicine in making the diagnosis.

Validity

Validity is a measure of whether the research does in fact gather data about the construct that is purported to be examined. The validity of this study is increased by including students who have the diagnosis of ADHD based on DSM-IV criteria.

One internal threat to the validity of the data was that of rater reliability. In the aggregate numbers released by the student disabilities service center, a rater determined if a student was a consistent or inconsistent utilizer of services. Only one rater was used at each university, and each was carefully instructed by the researcher. As a way to decrease this threat to validity, criteria was clearly delineated as to how students were to be categorized either as a consistent or inconsistent utilizer. In addition, certain accommodations, e.g. test accommodations, may have been used regularly but were not always reported to the student resource center once the student had received his/her certification card. As a way to decrease this threat to validity, the student disabilities service center was asked to report the specific type of service the student requested, and not just the fact that he/she requested one or more services. In the follow up interview, students were asked questions about the types of service they used, both as a check on the accuracy of the record from the student resource center, and also as a check to ensure that the student was properly identified as a consistent or inconsistent utilizer of services. The rater on each campus did not report any difficulty in categorizing students as consistent or inconsistent utilizers, thus lending credence to the fact that the criteria for categorization was clearly spelled out.

This research design also has authority validity in that the design of the study was based on interviews with seven experts in the discipline of student services. Prior to

designing the study, the researcher interviewed the directors of the student disabilities services centers, the counseling centers, and the student health centers on both campuses involved in the study. In addition, the researcher had consultation from a nationally recognized and widely published expert in the field of college students with ADHD, Dr. Mary Richard, Director of Student Disabilities Services at the University of Iowa in Iowa City.

The structured interview format has face validity. This refers to the process in which the interview questions were formulated. The researcher ran a pilot of the interview format on a third campus, and recorded the interviews conducted with college students. In the current study, the researcher recorded the interviews with students and transposed them to text in order to substantiate the content for analysis.

Relying on volunteers who agree to be interviewed is always susceptible to threats to validity, and this is especially the case with ADHD students, where organization and lack of follow-through are inherent to the disorder. The method of data collection in this study was designed so that the researcher made the contact with the student after the student agreed to have his/her name released from the service center. The responsibility for making the initial call and setting up the interview was left with the researcher, rather than the student.

In summary, the method of data collection in this study was bound by the ethics of confidentiality, the restriction of a criterion-based sample, and lack of control over certain extraneous variables. The design of the study had built-in controls over threats to the reliability and validity of the study by sampling only those students who have self-disclosed to an established student service center, by providing adequate rater training, by delineating clear criteria for rating, and by recording personal interviews to verify and clarify information already gathered about the student.