

# **Comparison of Ease of Falsification of Attention Deficit Hyperactivity Disorder Diagnosis Using Standard Behavioral Rating Scales**

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## **Abstract**

The purpose of this study was to explore the ability of college students to falsify a positive Attention Deficit Hyperactivity Disorder (ADHD) diagnosis after reading the DSM-IV-TR criteria for the disorder. Introductory psychology students at UCLA were given one of four commonly used diagnostic batteries and asked to answer as if they were afflicted with the disorder. The four batteries used were the Wender Utah Rating Scale (WURS), the Conners Adult ADHD Self-Report of Symptoms (CAARS), the Brown Adult ADHD Scale (BAAS), and the ADHD Rating Scale (ARS). It is expected that the Conners and Brown scales will be more effective in preventing a falsified diagnosis than the other three measures, but the results indicated that all four batteries were significantly falsifiable. The Wender scale and ARS were found to be somewhat less conducive to diagnosis falsification than the Brown scale. Hyperactivity was found to be the most crucial factor in diagnosis determination of both the ARS and Conners scales. While gender did not seem to be significant in determining the diagnosis for the ARS, the Conners scale, or the Brown scale, it was found to be the primary factor within the Wender scale. The results of this study may have implications in future methods of diagnosis of ADHD for the purpose of qualification for services for students with disabilities.

## **1 Introduction**

Attention Deficit Hyperactivity Disorder (ADHD) is defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revised (DSM-IV-TR) as an inability to sustain attention, impulsivity, and hyperactivity (American Psychological Association, 2000). To be diagnosed with ADHD, symptoms of

inattention, hyperactivity and impulsivity must be present by the age of seven. Six or more of these symptoms must have been prevalent for a period of at least six months to a degree where they clinically impair normal functioning in at least two aspects of life, such as school, work, home, or play. The symptoms must not occur exclusively during the course of a pervasive developmental disorder, like Schizophrenia, or another psychotic disorder, and must not be better accounted for by another disorder, such as mood, anxiety, or personality disorders. ADHD symptoms are divided into three subgroups: hyperactive-impulsive, inattentive, and combined. Girls and women are more likely to predominantly fall in the inattentive category, while boys and men tend to be predominantly in the hyperactive-impulsive subgroup. The subgroups do not differ, however, in cognitive, social, or psychosomatic deficits.

Symptoms, however, do tend to differ between the sexes. Women show more sexual misbehavior as they mature as a way of externalizing their symptoms. For this reason, women with ADHD have a higher rate of unwanted pregnancy. Women also demonstrate an increased number of emotional problems with age and are more likely to develop severe depression (Newcorn, Halperin, Jensen, Abikoff, Arnold, Cantwell, Conners, et al., 2001).

ADHD is approximately three times more prevalent among men than in women. Due to a natural tendency for men to be more aggressive than women, men with ADHD tend to show a higher number of conduct problems with age and are more likely to develop a conduct disorder. They have a higher rate of arrests than their female counterparts (Newcorn, et al., 2001).

### **1.1 Causes of ADHD**

The cause of ADHD remains unclear. In 1992, Gilger, Pennington, and DeFries found that there was a genetic predisposition to the disorder. Their twin study found an 81% concordance in monozygotic twins and a 29% concordance in dizygotic twins. This demonstrated that a person had a higher likelihood of acquiring the disorder if a parent and/or sibling suffered from ADHD (Gilger, et al., 1992).

Researchers also looked for brain damage and neurophysiological abnormalities in order to determine the source of the symptoms. Brain damage, defined as structural abnormalities, was only found in only 5 – 10% of the cases, and consequently it was concluded that it could not be the sole cause of the symptoms (Rutter, 1977). However, there were similarities found among patients. MRI studies consistently showed reduced blood flow to the frontal lobes, which are known for their involvement in higher order cognitive functions, such as reasoning and impulse control. The lack of blood flow to these areas could account for the lack of control of executive functions seen in ADHD patients, such as blurting things out without thinking (Zametkin, Liebenauer, & Fitzgerald, 1993).

### **1.2 ADHD and the College Population**

Due to the nature of the symptoms, ADHD affects many aspects of the patient's life. The college population is particularly interesting in this aspect because ADHD affects their lives in both the academic and occupational setting.

ADHD was previously thought to be a disorder of childhood, requiring a diagnosis before the age of 7. It was also thought that the symptoms would disappear with age

and completely vanish by puberty. Yet, it was later observed that approximately 70% of children diagnosed with ADHD continue to exhibit symptoms into adolescence and even adulthood (Heilingenstein & Keeling, 1995).

As patients grow older, symptoms tend to become more internalized and are, therefore, more difficult to diagnose. Common adult symptoms include a sense of underachievement in life as a whole, chronic procrastination, chronic problems with self-esteem, tendency to worry excessively and needlessly, mood swings, and tendency towards addictive behavior, such as sex, drugs, and alcohol (Hallowell, 1995).

Despite this fact, there is very little information available about how truly prevalent or disabling ADHD is in adults. What is known is that the prevalence of college students with previously unrecognized ADHD has increased in recent years. Students would often seek assistance because of unprecedented severe academic difficulties or nonspecific psychological problems. A recent study by Weyandt, Lintermann, and Rice (1995) showed that 7 to 8% of the college population suffered from the disorder. Other studies, however, have reported the prevalence of ADHD as being anywhere between 2 and 8% (Weiss & Murray, 2003; Heilingenstein & Keeling, 1995; Heilingenstein, Guenther, Levy, Savino, & Fulwiler, 1999; Rossini & O'Connor, 1995; Weyandt, Lintermann, & Rice, 1995). While it is true that adolescents with ADHD appear to be at greater risk for low academic achievement, grade retention, substance abuse, peer rejection, social skill deficits, and antisocial behavior, most college students with ADHD appear to have few problems outside of academics and often do not display any symptoms until they are faced with the college level work load.

Students had two major concerns, their grades and their mood. Undergraduates who had been high achievers in high school complained about unprecedented severe academic difficulties and underachievement. It was as if they could just not handle the increased school stress and increased amount of concentration required by the college workload. Thus, the level of work required in college could have created enough stress to cause symptoms of the disorder to rise to clinical levels (Heilingenstein, et al., 1999).

### **1.3 Laws Regarding Disabilities and Services for Students with Disabilities**

The federal government has recently amended existing laws to include learning disabilities, like ADHD, and ensure that these students, like any other disabled student, receives adequate aid and support through the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA). The main goal of these laws is to guarantee that individuals with disabilities are not excluded from public services, such as schools and libraries (ERIC Clearinghouse on Disabilities and Gifted Education, 1998; Fornadel & Taylor, 1994).

Section 504 of the Rehabilitation Act of 1973 and Title III of the ADA deal with the responsibilities of the public school system towards their learning disabled students and staff (Fornadel & Taylor, 1994). State laws, such as California Assembly Bill 746, have endorsed and elaborated on the specific details of the federal acts.

In accordance to the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and respective state laws, offices for students with disabilities in high school and college campuses across the country have designed special programs to assist

students with ADHD and other learning disabilities in having a successful college career. These programs include separate proctoring during alternative test-taking conditions, such as additional time to complete exams, quiet testing areas, technology resource rooms, priority enrollment and housing, accommodations for degree-related internships and off-campus field experiences, tutoring, and the opportunity to meet with instructors to review early drafts of an assigned essay (UC Regents Handbook, 2000; CSU-LB, 1989; UTD, 2000). These services are of great help to students with learning disabilities, but would be equally helpful to students who are not disabled. These services, in addition to the possibility of attaining prescription medication, may present a motive for students to attempt to fake learning disabilities in order to take advantage of the services provided. This would be an area potentially interesting for research.

Due to the fact that reasonable accommodations in all programs to students with disabilities, including students with ADHD are required by federal, state, and university laws, universities require certain documentation for qualification into their disability programs. In order to qualify for these services, students must provide current assessment of their condition, which may be accomplished through questionnaires, which permit the student to describe current concerns and past problems, or interviews with or questionnaires filled out by significant people in the student's life. Students must also provide complete developmental, educational, and medical histories. Lastly, a summary of assessment findings which explains how and why the condition is related to the problems the student has been encountering in academic settings must also be presented (UC Regents Guidelines, 2000).

Similarly, undergraduate and graduate school admission testing companies, like the Educational Testing Service (ETS), responsible for the Medical College Admissions Test (MCAT), Law School Admissions Test (LSAT), Graduate Records Examination (GRE), Scholastic Aptitude Test (SAT), and American College Testing (ACT), have also provided students with disabilities with different options to facilitate testing. These alternate testing conditions include, but are not limited to: a separate testing room, additional testing time and rest time between sections, tests on audiocassette (American Association of Medical Colleges, 2000; Law School Admissions Council, 2000; Graduate Records Exam, 2000; The College Board, 2000; Educational Testing Service, 2000). Commentators have often wondered about the fairness of so many services being offered regarding the integrity of the tests. They argue that in life after school will not provide the countless services offered to them in the admission process and during their college career.

These alternative testing conditions can be arranged by submitting a letter or form to the testing company along with the registration form specifying the requested accommodations. The request for alternative accommodations must be very specific, including the amount of additional time requested and the reasons why such accommodations are necessary due to the nature of the disorder. The letter must be accompanied by a letter from a qualified physician or other specialist documenting a current diagnosis of the disability, within five years, the treatment provided, and their explanation of the need for the requested accommodations. For the diagnosis of ADHD, relevant batteries, such as the Wender Utah Rating Scale (WURS), Conners Adult ADHD Rating Scale: Self-Report or Symptoms (CAARS:L:S), ADHD Rating Scale (ARS), or Brown Adult ADHD Scale (BAAS), should be provided to as supporting evidence of attention problems.

#### 1.4 Behavioral Rating Scales Used in ADHD Diagnosis

Behavioral rating scales, defined as questionnaires used to quantify clinically relevant behaviors, such as the aforementioned batteries, serve to quantify the symptoms needed for a diagnosis. These rating scales play an especially important role in the diagnostic assessment of ADHD. While behavioral rating scales, especially self-report scales which are susceptible to self bias, have definite limitations, they also have clear advantages since they are norm-referenced, psychometrically sound, ecologically valid, and practical to use (Power & Ikeda, 1996). These scales also provide unique information in evaluating problems associated with ADHD from the perspective of both an observer, such as in parent or teacher reports, or from the interviewee, from self-reports.

Self-report scales become more useful with age. This is due to the fact that overt restlessness tends to diminish with age allowing for a higher degree of impulsivity. Increased levels in internal symptomatology appear with age. Females demonstrate an increased amount of internal and emotional problems, while males show higher numbers of conduct problems. Lowered self-esteem is a particularly important secondary symptom of ADHD in adolescents (Conners, Wells, Parker, Sitarenios, Diamond, & Powell, 1997). These symptoms are virtually undetectable in observer reported scales. A problem arises in self-report scales, however, due to the fact that ADHD patients tend to have a distorted self-view because of a sense of underachievement in life.

*Wender Utah Rating Scale (WURS):* The Wender Utah Rating Scale (WURS) was among the first scales to be used in ADHD diagnosis. It was developed by Ward, Wender, and Reimherr, in 1993, in an attempt to overcome the problem of retrospectively diagnosing ADHD. The Utah Criteria Method used in this scale requires that hyperactivity be present in both childhood and adulthood for a diagnosis (Rossini & O'Connor, 1995). This not only immediately eliminates those in the inattentive subgroup, but also those individuals who did not exhibit any clinically significant symptoms until they arrived in college. It was modeled after the pediatric interval-level scales used to diagnose ADHD in young children. The purpose of WURS is to quantify retrospective self-reports of childhood hyperactive, inattentive, and distractible symptoms (Rossini & O'Connor, 1995). The original study correctly identified 86% of the patients with ADHD, 99% of the normal subjects, and 81% of depressed patients (Ward, et al., 1993). In a validity test by McCann, Schelle, Ward, Roy-Byrne, Anton, Beck, et al. (2000), however, only 57.5% of those who did not have ADHD and 72.1% among those who did were correctly classified. This suggests that while the WURS is sensitive to ADHD, it misdiagnoses approximately half of those who are not truly affected by the disorder. The prevalence of false positives may also aid those who would fake ADHD in order to take advantage of the services provided to students with disabilities, particularly the additional examination time.

*ADHD Rating Scale IV (ARS):* The ADHD Rating Scale IV (ARS), developed by DuPaul, Power, Anastopoulos, and Reid in 1998, attempts to identify patients in all three pertinent subgroups of the disorder: attention, impulsivity, and hyperactivity. The scale was developed in both a self-report and teacher-report version. The teacher-report version is commonly used to examine gender differences among ADHD patients across different ethnic groups (Reid, Riccio, Kessler, DuPaul, Power, Anastopoulos, et al., 2000). Like the WURS, the format of this particular scale is also consistent with ADHD rating scales used for diagnosis in children. The scale's

validity and reliability were assessed in a 1995 study by Weyandt and colleagues who found that the construct validity, internal consistency, and test-retest reliability was good and could be useful in accurate diagnosis and determination of appropriate treatment.

*Brown Adult ADHD Scale (BAAS):* The Brown Adult ADHD Scale (BAAS) is yet another self-report instrument, developed in 1996 by Thomas E. Brown to measure ADHD in adolescents and adults (Brown, 1996). It is predominantly used to diagnose ADD, which is harder to identify than the other subgroups of ADHD (Heiligenstein & Keeling, 1995). This scale reveals impairments in five clusters of executive functions, usually associated with the frontal lobe, which are usually associated with ADHD. The impairment of executive function could explain why some ADHD symptoms do not appear until faced with academic or other complex intellectual demands, such as the increased difficulty and amount of schoolwork in college (Kubose, 2000).

*Conners Adult ADHD Rating Scale: Self-Report of Symptoms (CAARS):* The most recently developed behavior rating scale for ADHD diagnosis is the Conners Adult ADHD Rating Scale: Self-Report of Symptoms (CAARS) developed by Conners, Erhardt, Epstein, Parker, Sitarenios, and Sparrow in 1999. The purpose of this scale was to create a well-standardized adult behavior rating scale, such as those available for childhood assessment. The current literature identifies nine aspects of adult ADHD functioning that provided the initial hypothesis regarding factor structure and scale items. This self-report scale has high sensitivity and specificity, having an overall diagnostic efficiency of 83% (Conners, Erhardt, Epstein, Parker, Sitarenios, & Sparrow, 1999). Originally, this scale was developed to compliment parent and teacher rating scales as children entered adolescence due to the facts that middle school teachers were less able to observe each child individually and that adolescents begin to spend less and less time at home under parental supervision. This scale not only covers the primary symptoms addressed in parent and teacher rating scales, but also an extensive range of family, cognitive, self-esteem, mood, and conduct problems (Conners, Wells, Parker, Sitarenios, Diamond, & Powell, 1997).

While the literature and psychological tests concerning child ADHD are extensive, the study of adolescent and adult ADHD remains a relatively new and unexplored area of psychopathology. Researchers have yet to fully explore factors exclusive to the older ADHD populations (Downey, Stelson, Pomerleau, & Giordani, 1997). Due to this, behavioral rating scales used for adolescents and adults are not as refined and well documented as those used to assess in children.

The available tests have all been tested for construct validity, internal consistency, and test-retest reliability. They have not, however, been compared to each other. It is important for specialists to be able to determine the best way to diagnose and provide treatment for individuals with ADHD. The authors of the batteries have also failed to take into consideration the possibility that people may attempt to feign ADHD in order to take advantage of the services offered to students with disabilities through the various schools and testing companies. Studies in this area would be helpful in preventing exploitation of disabled student services.

The purpose of this study was to compare the reliability of these four commonly used diagnostic batteries when the person filling them out was deliberately attempting to feign a positive ADHD diagnosis.

Due to the fact that the Conners and Brown scales are more recent and were developed especially for the adult populations, it was hypothesized that these two scales would be more effective in preventing a falsified diagnosis than the ARS or Wender Scales.

## **2 Methods**

### **2.1 Participants**

Participants were 80 members (49 female, 31 male, mean age 19.29) of the Psychology 10 subject pool of the University of California, Los Angeles. The participants volunteered as a way to fulfill the six-hour research requirement for the Psychology 10 course. Participation was limited to those subjects who had never been previously diagnosed with ADHD.

### **2.2 Design**

The experiment had a between-subjects design. It was comprised of one independent variable, the diagnostic battery completed, consisting of four levels. Each of these levels corresponded to one of the four diagnostic batteries used. The dependent variable, diagnosis result, was measured by whether or not the test was scored positive or negative for an ADHD diagnosis. Subjects were randomly assigned to one of the four batteries. There were only 20 copies of each battery available to ensure that each condition had an equal number of participants.

### **2.3 Materials and Apparatus**

All of the participants were first given a copy of the ADHD criteria from the DSM-IV-TR (American Psychological Association, 2000).

Four commonly used ADHD diagnostic batteries were used to determine the ease of falsification of a positive diagnosis for the disorder. The batteries used were the Wender Utah Rating Scale (WURS), the Brown Adult ADHD Scale (BAAS), the Conners Adult ADHD Rating Scale: Self-Report of Symptoms (CAARS:S:L), and the ADHD Rating Scale (ARS). Each of the four batteries was scored using its particular method.

The Wender Utah Rating Scale (WURS) quantified retrospective self-reports of childhood symptoms through 61 items scored using a five-point severity scale (zero to four). The test is divided into three sections concerning childhood symptoms, childhood medical history, and childhood educational history. The final score is made up of each section's subscore. A total score above 112 is considered a positive diagnosis.

The ADHD Rating Scale (ARS) consisted of 25 items that pertained to the three subgroups, attention, impulsivity, and hyperactivity, scored using a four point (zero to three) scale. In order to compute the attention subscore, the answers for the odd questions are added up. The total for the even questions makes up the hyperactivity/impulsivity subscore. The final score is obtained by adding the attention and hyperactivity/impulsivity subscores. A positive diagnosis is given to females scoring above a 22 and to males scoring above a 23.

The Brown Adult ADHD Scale (BAAS) was a 40 item self-reporting instrument scored on a four-point frequency scale (one to four), which focused on the difficulty of initiating and maintaining optimal arousal levels. This scale reveals impairments in the five clusters of executive functioning of the frontal lobe, which are activation, attention, effort, affect, and memory. Using the Quick Score sheets provided by The Psychological Corporation, the scores for the individual questions were placed in the appropriate cluster. A total score of 55 and above was considered a positive diagnosis. For the purpose of this experiment, a score between 40 and 55 was considered a negative diagnosis although scores in this area are normally considered as “probable, but not certain.”

The Conners Adult ADHD Rating Scale: Self-Report of Symptoms (CAARS:S:L) was a highly specific 64 item self-report, which is scored using a four point Likert Scale (one to four) presented in both intensity and frequency. The total score consists of eight subscores. These are inattention/memory problems, hyperactivity/restlessness, impulsivity/emotional liability, problems with self-concept, DSM-IV inattentive symptoms, DSM-IV hyperactive/impulsive symptoms, DSM-IV ADHD symptoms total, and ADHD index. Scores for the individual questions were placed in each category using the Quick Score sheets provided by Multi-Health Systems, Inc. The diagnosis was considered positive if the ADHD index score was above a 13 for males and an 11 for females.

## 2.4 Procedure

Each testing session consisted of up to eight participants at a time. The experimenter read a carefully outlined instruction sheet aloud to the participants at the beginning of the testing session. All of the participants were first shown a list of ADHD symptoms from the DSM-IV-TR and asked to remember as many of the disorder's characteristics as possible. They were given 5 minutes to study the criteria. Participants were then randomly assigned to one of four commonly used batteries and told to complete them while pretending to be affected with the disorder. Each participant was given 55 minutes to complete this part of the task. At the end of the hour, the experimenter read a carefully outlined disclosure sheet informing the participants about the purpose of the study.

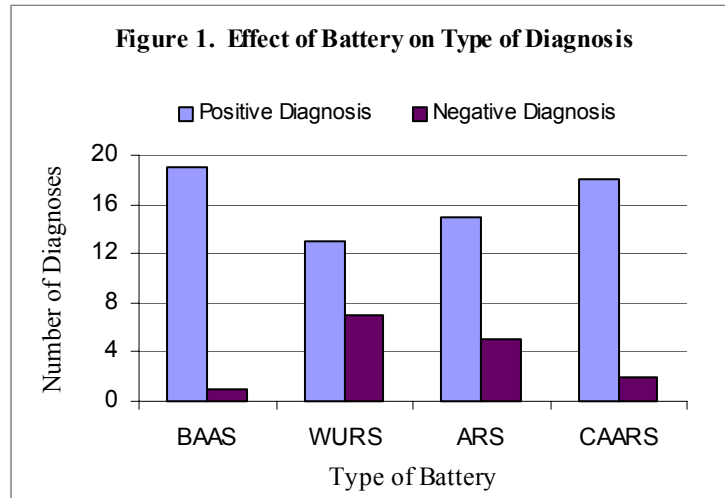
Each battery was scored using its particular method, and the number of positive and negative diagnoses was counted. The data was analyzed using an individual Z-test analysis of proportions, a comprehensive Chi-Square test for the effects of the battery, a Chi-Square test for the effects of gender, and a regression analysis to determine the individual factors that allowed for diagnosis falsification in each questionnaire.

## 3 Results

The number of positive and negative diagnoses for the ADHD Rating Scale (positive = 15, negative = 5), Brown Adult ADHD Scale (positive = 19, negative = 1), Conners Adult ADHD Rating Scale (positive = 18, negative = 2), and Wender Utah Rating Scale (positive = 13, negative = 7) are illustrated in Figure 1. To test the significance of these ratios, the data for each battery was individually analyzed using a Z-test analysis of proportions, with  $\alpha = .05$ . This analysis revealed that the ADHD Rating Scale,  $z(20) = 6.91, p < .001$ , the Brown Adult ADHD Scale,  $z(20) = 17.89, p < .001$ , the Conners Adult ADHD Rating Scale,  $z(20) = 12.28, p < .001$ , and the Wender



Utah Rating Scale,  $z(20) = 5.28, p < .001$ , were all significantly easy to fake. In other words, these scores are significantly different from the expected 100% negative diagnoses that should have been obtained by this particular population.



**Figure 1.** Number of positive and negative diagnosis for each type of battery. A total of 65 positive and 15 negative diagnoses were made.

To determine if one battery was easier to falsify than the others, the data was then analyzed using a four by two Chi-Square, with  $\alpha = .05$ . This analysis showed that the Wender Utah Rating Scale was significantly more effective in preventing a falsified diagnosis than the Brown Adult ADHD Scale and Conners Adult ADHD Rating Scale,  $\chi^2(3, N = 80) = 7.47, p < .05, \chi^2(1, N = 40) = 5.63, p < .025, \chi^2(1, N = 40) = 3.85, p < .05$ . Further analysis demonstrated a significant difference between the ADHD Rating Scale and the Brown Adult ADHD Scale as well,  $\chi^2(1, N = 40) = 3.84, p < .05$ . There was no significance in the ease of falsification between the ADHD Rating Scale and the Conners Adult ADHD Rating Scale,  $\chi^2(1, N = 40) = 1.56, ns$ , the ADHD Rating Scale and the Wender Utah Rating Scale,  $\chi^2(1, N = 40) = .48, ns$ , or the Conners Adult ADHD Rating Scale and the Brown Adult ADHD Scale,  $\chi^2(1, N = 40) = .36, ns$ .

As all scales were made up of various subscales pertaining to the different symptoms, a regression analysis was done on all four batteries individually in order to identify the factors that weigh in more heavily into the determination of diagnosis, with  $\alpha = .05$ , which will allow for exploration of the areas more likely to be used in diagnosis falsification. Analysis of the ADHD Rating Scale showed that hyperactivity accounted for 47% of the variance in the diagnosis,  $T = 4.02$ , and attention accounted for 34% of the variance,  $T = 3.04$ . Gender did not significantly account for any of the diagnosis variance.

Analysis of the Wender Utah Rating Scale illustrated that section I,  $T = 2.13$ , and section III,  $T = 5.33$ , were better determinants of a positive diagnosis than section II. The factor that accounted for the most variance in diagnosis was gender,  $T = -2.71$ .

Males were shown to have a higher probability of attaining a positive diagnosis than females.

When the Conners Adult ADHD Rating Scale was analyzed, it was shown that 83% of the variance was due to hyperactivity,  $T = 3.49$ , DSM-inattention symptoms,  $T = 2.90$ , and the ADHD index score,  $T = 5.06$ . Effort,  $T = 4.11$ , accounted for 50% of the diagnosis variance in the Brown Adult ADHD Scale. The results for these two scales are of little significance due to a very small number of negative diagnoses.

The data was also analyzed to see if one gender was better at falsifying a diagnosis than the other. The percentage of females (positive = 83.67%, negative = 16.33%) and males (positive = 80.65%, negative = 19.35%) was analyzed using a Chi-Square analysis, with  $\alpha = .05$ , which showed that the slight difference between the genders was not significant,  $\chi^2 (1, N = 80) = .12$ , ns.

#### 4 Discussion

The results reveal a strikingly high ability of college students to falsify a positive ADHD diagnosis by way of a self-report battery: 75% of students taking the ADHD Rating Scale, 95% of students taking the Brown Adult ADHD Scale, 90% of students taking the Conners Adult ADHD Rating Scale, and 65% of students taking the Wender Utah Rating Scale. These findings are remarkably different from the 7 to 8% of the college population that has been reported previously to be affected by the disorder (Weyandt, et al., 1995). These results also reveal that all four batteries are significantly easy to fake. While the psychological tests used for child diagnosis are refined and well documented, the ease of diagnosis falsification of batteries developed for adults is a sign that further improvement of these scales is needed and a reliable adult scale has yet to be produced.

One purpose of this study was to compare the reliability of these four commonly used adult diagnostic batteries when subjects were deliberately attempting to feign a positive ADHD diagnosis. It was found that the Wender Utah Rating Scale is significantly more effective in preventing falsification of a diagnosis than the Brown Adult ADHD Scale. The ADHD Rating Scale also was found to be better than the Brown Adult ADHD Scale at preventing diagnosis falsification. It appears, then, that the batteries that were developed to be more specific for adult diagnosis are become more easily falsifiable as the incidence of internal symptoms become more prevalent. These symptoms may prove to be more difficult to quantify than the overt behaviors seen in children, even with a self-report battery.

The regression analysis for the ADHD Rating Scale revealed that the hyperactivity component played a larger role in determining a diagnosis than the inattention component. All other factors played insignificant roles in diagnosis determination. The importance of hyperactivity symptoms was further supported in the Conners Adult ADHD Rating Scale regression analysis, although there was a low number of negative diagnoses. This could be due to the fact that hyperactivity symptoms are more commonly associated with ADHD than are inattention symptoms, and they, therefore, would be of greater focus when creating and falsifying a behavioral rating scale.

While gender did not seem to influence the type of diagnosis received in the ADHD Rating Scale, the Brown Adult ADHD Scale, or the Conners Adult ADHD Rating

Scale, it is interesting to note that it was the primary factor in determining the diagnosis in the Wender Utah Rating Scale. Due to the fact that ADHD is three times more prevalent in males, it is a possibility that the battery was created with a slight bias toward common male responses.

The present findings have serious implications in the way college students are diagnosed. It has been found that treatment of ADHD is multidimensional. Academic support services facilitate adaptation to the college workload. Students with ADHD tend to benefit from services such as extended exam time, note-taking assistance, research assistance, and access to a technology research room (Heilingenstein & Keeling, 1995). These services are also desirable to students who are not affected by ADHD. In fact, it has been hypothesized that a possible cause for the sudden increase of ADHD cases in the college population could be due to the attractiveness of these services, particularly the additional time to complete class and admissions exams. The actual likelihood of the desire to falsify a diagnosis for this purpose would be an interesting area of future research.

Yet another popular thought on the possible cause of increase in adolescent ADHD is the popular prescription of the mild stimulant, methylphenidate, or more commonly known as Ritalin. Ritalin is the most widely prescribed drug for treatment of ADHD symptoms. Unfortunately, Ritalin is also among the top ten controlled pharmaceuticals most frequently reported stolen. Between May 1995 and January 1999, the DEA reported nearly 2,000 cases of Ritalin theft. The use of Ritalin as a recreational drug is not uncommon. According to a 1997 survey conducted at Indiana University, 7% of high school students surveyed reported using the drug recreationally at least once in the previous year, and 2.5% reported using it monthly or more often (Ziegler, 2000). Aside from the euphoric effects of the drug, students also use Ritalin as a study aid. It is widely known that the biological effects of Ritalin, increased blood flow to the frontal lobes, can help a student stay awake and maximize concentration, whether they suffer from ADHD or not (Diller, 2000).

The combination of academic support and Ritalin availability could provide enough motivation to cause students to attempt to falsify a positive ADHD diagnosis in order to take advantage of services offered to students with learning disabilities. This fact presents an alarming thought to those individuals who truly suffer from the disorder.

The present study raises several questions that should be addressed in further research. Because these diagnostic batteries have never been compared to each other, it would be helpful to have comparable data for a similarly sized sample of students that answer the questionnaires without deliberately trying to fake a diagnosis. A comparison of the two groups would give a better impression of the true misdiagnosis frequencies and ease of falsification of each battery.

The present study suggests that in order to ensure that services are only offered to those who truly require of them, the score obtained from the behavioral scale should be interpreted with more caution. Perhaps, a second form of diagnostic method should accompany the rating scale score in order to avoid the problem of students taking advantage of medication and school programs. The use of an interview by an expert should become mandatory, and not just an option for those who need to verbalize their symptoms for access to school services. Because symptoms of ADHD are individualized, it is important to know the extent of impairment caused by the symptoms. The results of the diagnostic batteries do not reveal these details, and therefore, do not indicate the appropriate treatment that is required by each patient.

The use of a second diagnostic method, like interview with an expert, will not only indicate the services needed for patients to achieve their full potential, but it will also diminish the rate of misdiagnosis and diagnosis falsification.

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