ASSESSING ATTENTION DEFICIT HYPERACTIVITY DISORDER IN ADULTS

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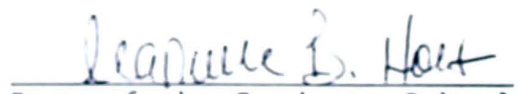
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ASSESSING ATTENTION DEFICIT HYPERACTIVITY

DISORDER IN ADULTS

A Thesis

Presented for the

Master of Arts

Degree

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Chris Ceretti

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ABSTRACT

With increasing numbers of adults presenting with symptoms of Attention Deficit Hyperactivity Disorder (ADHD), the identification of empirically sound instruments is essential for accurate diagnosis and effective treatment of adults with ADHD. Two such instruments are currently available. The Wender-Utah Rating Scale (WURS) was designed for the retrospective diagnosis of childhood symptoms of ADHD in adults. The Copeland Symptom Checklist (CSC) for Adult Attention Deficit Disorders was developed to assess currently existing ADHD symptoms most commonly reported in adults and adolescents. Both instruments are reported by their authors to be congruent with the prevailing diagnostic criteria (DSM-IV, 1994), clinically validated and effectual in the comprehensive assessment of ADHD in adults. The current research investigates the relationship between scores obtained on the WURS and the CSC to determine if these two instruments appear to be measuring the same underlying constructs in an undiagnosed population. Ninety-two college students participated in the current study and completed both the WURS and the CSC. Multiple regression revealed a significant correlation between the subscales of the CSC and scores on the WURS. However, it

appears that the CSC and WURS may be over-diagnosing adult ADHD. The need for further research is discussed.

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CHAPTER 1

INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) was once considered to be a disorder of childhood which disappeared with the onset of adolescence (Coleman & Levine, 1988; Fischer, Barkley, Fletcher & Smallish, 1993; Klein, 1987; Weiss, Hechtman, Milroy & Perlman, 1985). ADHD is now widely recognized as a life-long disorder (Barkley, 1990; Hallowell & Ratey, 1994; Klein & Mannuzza, 1991; Shekim, Asarnow, Hess, Zaucha & Wheeler, 1990; Weiss, Hechtman, Milroy & Perlman, 1985; Zametkin & Borcherding, 1989). The rapid increase in the number of adults presenting with ADHD has created an acute awareness of the urgent need for improved diagnostic criteria as well as for more effective intervention methods for treating adults with ADHD (Barkley, 1990; 1991; Cotugno, 1993; Coleman & Levine, 1988; Shekim, Asarnow, Hess, Zaucha & Wheeler, 1990; Woods, 1986). No one really knows how many adults may have ADHD. Current research suggests that approximately one-third to one-half of all children with ADHD continue to experience significant behavioral and attentional problems into adulthood (Shekim, Asarnow, Hess, Zaucha, & Wheeler, 1990). Prevalence estimates of 3 to 5 percent of school-aged children diagnosed with ADHD suggest that about 1 - 2 percent of these children may continue to endure symptoms associated with ADHD as adults (Barkley, 1990; Klee, Garfinkel &

Beauchesne, 1986; Weiss, Hechtman, Perlman, Hopkins, & Wener, 1979; Shekim, Asarnow, Hess, Zaucha, & Wheeler, 1990). ADHD impacts significantly upon the social, economic, physical, and emotional well being of adults with ADHD as well as children sufferers (Barkley, 1990; Fischer, Barkley, Fletcher, & Smallish, 1993; Phelan, 1993; Weiss, Hechtman, Milroy & Perlman, 1985, Wender, 1995).

Much controversy exists over the etiology and manifestation of adult ADHD. Barkley (1990) hypothesizes that ADHD is a product of volitional inhibition – motivational deficits associated with an insensitivity to behavioral consequences and inadequate rule-governed behavior. Wender (1987, 1995) advocates a genetic predisposition consisting of heterogeneous traits. Wender (1995) also emphasizes the importance of obtaining detailed behavioral and developmental histories for determining specific behavioral styles and characteristics inherent from childhood in order to appropriately diagnose ADHD based on criteria described in DSM-IV (1994). Copeland (1989) postulates, based on over 20 years of clinical observation, that ADHD is both genetic and environmental in nature. Copeland believes that emotional difficulties and poor peer relations are exacerbated in adults with ADHD and tend to manifest in adulthood as problems with poor work relations, poor family relations, poor interpersonal relations, low

self-esteem, years of continued frustration and failure.
Copeland also emphasizes that adults have learned to cope
with their emotions, failures and frustrations since
childhood and have become more adept in covering up
problems. Children are more likely to exhibit their
problems more openly as a result of their immaturity and
inexperience (Copeland, 1989).

Two instruments have been designed for use in the
assessment of adult ADHD, The Wender-Utah Rating Scale
(WURS, 1993) developed by Ward, Wender and Reimherr (1993)
and The Copeland Symptom Checklist for Adult Attention
Deficit Disorders (CSC) designed by Copeland (1989). The
WURS and the CSC have distinct differences in their authors'
approaches to identifying characteristics of adult ADHD in
their instruments. The CSC was designed for two specific
clinical purposes (Copeland, 1989). The first purpose for
which the CSC was designed was as a diagnostic tool for
identification of distinctive problem areas of dysfunction
which could be specifically dealt with in the therapeutic
process. The second clinical objective was similar - to
provide an objective assessment of treatment effects.
Dysfunctional problem areas are divided into eight
categories - Inattention/Distractibility, Impulsivity,
Activity Level Problems, Noncompliance,
Underachievement/Disorganization/Learning Problems,

Emotional Difficulties, Poor Peer Relations, and Impaired Family Relationships. Copeland (1989) believes these eight categories are representative of the most commonly reported symptoms associated with adult ADHD.

The Wender-Utah Rating Scale (WURS) was designed for use with adults who report a history of attentional problems, impulsivity and hyperactivity since childhood (Ward, Wender & Reimherr, 1993). Because the Wender criteria (Wender, 1987) stipulates that attentional difficulties, impulsivity and hyperactivity must have been present since childhood to be diagnosed with ADHD as an adult, the WURS contains no classification for adults without hyperactivity as a child.

While the majority of professionals working in the field of ADHD tend to focus on the needs of children with this disorder (August, Ostrander, & Bloomquist, 1992; Day & DeV. Peters, 1989; DuPaul, 1992; Guevremont, DuPaul, & Barkley, 1990; Barkley, DuPaul, & McMurray, 1990; Jensen, Xenakis, Shervette, Bain, & Davis, 1989; Lahey, Schaughency, Hynd, Carlson, & Nieves, 1987; and Sharma, Halperin, Newcorn, & Wolf, 1991) there has been a recent growing interest in how ADHD manifests itself in adulthood (Gittelman, Mannuzza, Shenker, & Bonagura, 1985; Klee, Garfinkel, & Beauchesne, 1986; Klein, 1987; Klein & Mannuzza, 1991; Mannuzza & Klein, 1992; Mannuzza, Klein, &

Addalli, 1991; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993; Mannuzza, Klein, Konig, & Giampino, 1989). ADHD is most commonly diagnosed in school-aged children for the purpose of educational classification (Martin, 1993; McKinney, Montague, & Hocutt, 1993). For adults, who are usually self-referred for assessment, the diagnosis of ADHD has been for the purpose of psychiatric evaluation and classification of their ADHD subtype to determine the most effective treatment to implement (Barkley, 1990; Barkley, DuPaul & McMurray, 1990; Shaffer, 1994; Wender, Reimherr, & Woods, 1981). ADHD has become one of the fastest growing diagnostic categories for adults and requires the expertise and experience of trained clinicians to accurately diagnosis and treat (Wender, 1987, 1995).

ADHD is diagnosed through assessment of common characteristics associated with ADHD established by DSM-IV (1994) using an interview or self-report format (Barkley, 1990; Wender, 1987, 1995; Copeland, 1989). These common characteristics include inattention, impulsivity and hyperactivity.

Because many adults have become so proficient in coping with their ADHD, it is often difficult to accurately recognize and diagnose ADHD in adults (Wender, 1987). Many of the coping strategies and behaviors observed in adults with ADHD are similar to those seen in other psychiatric

disorders and may lead to a false diagnosis (Wender, 1995). Comorbidity of psychological disorders such as Borderline Personality Disorder and Mood Disorders also make differential diagnosis of adult ADHD more difficult (Barkley, 1990).

The purpose of the current study was to investigate the relationship between the constructs measured by the CSC (Copeland, 1989) and the WURS (Ward, Wender, & Reimherr, 1993). The constructs measured by the WURS are based on the Wender criteria (Wender, 1987) which requires a childhood history of problems associated with persistent motor hyperactivity, attentional difficulties, affective lability, disorganization, inability to complete tasks, hot temper with explosive short-lived outbursts, impulsivity and emotional over-reactivity prior to the age of seven. The constructs measured by the CSC as defined by its author include Inattention/Distractibility, Impulsivity, Activity Level Problems, Noncompliance, Underachievement/Disorganization/Learning Problems, Emotional Difficulties, Poor Peer Relations, and Impaired Family Relationships. It is expected that there will be a high correlation found between scores generated from these two instruments.

CHAPTER 2

REVIEW OF LITERATURE

A growing recognition of the lack of research and
diagnostic tools available for use in the assessment of
attention deficit hyperactivity disorder (ADHD) in adults
has recently emerged (Copeland, 1989; Hallowell & Ratey,
1994; Weiss, 1992; Wender, 1987). Many clinicians find it
difficult to accurately diagnose and successfully treat
adults with ADHD (Barkley, 1990; Phelan, 1993; Wender, 1995)
due to the lack of research in this area and the need for
sound empirical instruments and interventions. Outcome
studies designed to observe children with ADHD into
adolescence and early adulthood did not begin until the
1970's. These outcome studies were followed by research
designed to assess comorbid clinical and personality
disorders associated with ADHD in adolescence and adults,
neurological studies attempting to identify an etiological
basis for ADHD and criterion based studies designed to aid
in the development of assessment measures.

Longitudinal Studies

Weiss, Hechtman, and Perlman (1978) and Weiss,
Hechtman, Perlman, Hopkins, and Wener (1979) began a
longitudinal study of children diagnosed with ADHD for the
purpose of establishing the adult outcome of childhood ADHD.
One hundred and four children, ranging in age from 6 to 12
years old at the start of the study, were followed until

they were 21 to 33 years old. Assessment of overall behavioral and psychiatric functioning was completed at 5, 10 and 15 year intervals (Weiss, Hechtman, Milroy, & Perlman, 1985). Hyperactive children were not being pharmaceutically treated to allow for non-pharmaceutical methods of treatment such as therapeutic interviews, family therapy and individual therapy to be evaluated.

At the 5-year interval, 91 of the original 104 children were available for assessment. Findings showed that subjects with ADHD at adolescence (mean age 14 years) reported experiencing decreased difficulties with hyperactivity but continuing problems with failing grades, restlessness, distractibility, emotional immaturity, inability to maintain goals, impulsivity and poor self-esteem (Weiss, Hechtman, & Perlman, 1978).

At the 10-year follow-up, 75 of the subjects with ADHD and 44 of the matched control subjects were available for assessment. Subjects with ADHD (mean age of 19) were found to be experiencing increased problems with impulsivity; immaturity such as poor judgment, a lack of understanding for behavioral consequences and having more car accidents than control subjects; failing more grades in high school; and completing fewer years of education than control subjects (Weiss, Hechtman, Perlman, Hopkins, & Wener, 1979). A trend was noted for the subjects with ADHD to have a

record of more court referrals for theft, aggressive behaviors, drug offenses, disturbing the peace, and traffic offenses during the last five years of the study than control subjects. Personality trait disorders such as impulsivity, immature-dependence, obsessive-compulsive behaviors, aggression and depression were diagnosed more often in the subjects with ADHD and appeared to be a frequent adult outcome of childhood ADHD. Weiss, Hechtman, Perlman, Hopkins, and Wener (1979) also noted that two of the subjects with ADHD died in motorcycle accidents and one committed suicide prior to the 10-year follow-up. Subjects with ADHD were found to perform significantly worse on tasks measuring social skills and self-esteem and continued to exhibit impulsive approaches, rather than reflective approaches, in solving cognitive tasks. Subjects with ADHD were also found to differ significantly from the control group subjects in the area of social adjustment, such as number of friends and extent of conformity to societal norms. Degree of restlessness, such as fidgeting while seated or tapping fingers or feet, during the clinical interview, was increased for subjects with ADHD. Further findings revealed that subjects with ADHD, evaluated at follow-up using self-rating scales and personality tests, did not view their problems as more psychopathological than those of the control group. However, they did tend to view

themselves as inferior to the control group subjects in the areas of society's ideals of social interaction, self-esteem, and competence.

Sixty-three of the subjects with ADHD and 41 of the matched control subjects, were available for psychiatric evaluation at the end of the 15-year study (Weiss, Hechtman, Milroy, & Perlman, 1985). Mean age for both groups was 25 years old. Self-rating scales (California Personality Inventory, Schedule for Affective Disorders and Schizophrenia and the Symptom Checklist - 90), structured and semi-structured interviews were used in the psychiatric evaluation. Thirty-nine of the subjects with ADHD and 3 of the control subjects reported continued problems with restlessness, poor concentration, impulsivity, and explosiveness. Forty-six of the subjects with ADHD compared to 22 of the control subjects listed problems with interpersonal difficulties; 41 of the subjects with ADHD and 28 of the control subjects acknowledged difficulties with poor self-esteem, getting organized and completing tasks; 48 of the subjects with ADHD compared to 21 of the control subjects indicated feelings of anxiety and/or depression; 24 subjects with ADHD and 11 control subjects reported having had thoughts of suicide; 6 of the subjects with ADHD and none of the control subjects actually attempted suicide with one subject with ADHD succeeding in committing suicide; and

27 of the subjects with ADHD and 11 control subjects admitted to problems with alcohol abuse during the past 3 years. The authors concluded that children with ADHD appear to be predisposed to experience an exacerbation of problems associated with ADHD as well as an increase of symptoms related to psychopathology into adulthood.

Gittelman, Mannuzza, Shenker, and Bonagura (1985) conducted a longitudinal study of 101 males for the purpose of identifying stable predictors of adult ADHD. Subjects were between the ages of 6 to 12 years old at the start of the study and were referred by teachers, parents and clinical staff because of behavioral problems. The authors were interested in evaluating outcomes for subjects who had reached the ages of 16 to 23 years. Results suggested that children with ADHD were at a much greater risk than control subjects for developing antisocial behaviors and substance abuse disorders (other than alcohol).

Cadoret and Stewart (1991) performed an adoption study of 283 male subjects from the Iowa Children's and Family Services of Des Moines and from Lutheran Social Services of Des Moines, Iowa who had been separated at birth from their parents and placed with nonrelatives. The study was designed to investigate the contribution of genetic and environmental factors to the etiology of ADHD as well as the possible relationship of adolescent and adult

psychopathologies such as aggression and adult antisocial personality disorder. Subjects ranged in age from 18 to 40 years of age at the time of the study. Information obtained from agency adoption records indicating biological familial histories of psychiatric and/or behavior problems, interviews with adoptive parents and diagnoses of adult psychiatric conditions determined through the Diagnostic Interview Schedule (DIS) were reviewed. Forty-nine subjects were found to have significant correlations between high scores on childhood attentional problems and hyperactivity. DIS scores used for the diagnosis of adult psychiatric problems for the 49 subjects with attentional problems and hyperactivity were then correlated with rating scales indicating the presence of childhood attention deficit hyperactivity disorder, biological parental history of delinquency, a history of aggressiveness, adult criminal conviction, and environmental factors such as socioeconomic status and psychiatric problems in adoptive family members. Biological parents with a history of delinquency or criminal convictions had children who showed an increased incidence of ADHD and adult antisocial personality disorder (ASP). Lower socioeconomic status and increased psychiatric problems in adoptive family members correlated significantly with aggressive behaviors and ADHD. ASP was found to be significantly correlated with aggressiveness, but not ADHD,

in the adoptive family. The authors concluded that ADHD has many possible associated behavioral characteristics which are influenced by either genetic or environmental factors or both.

Herrero, Hechtman, and Weiss (1994) and Lilienfeld and Waldman (1990) suggest that the recurring association found between adult ADHD and antisocial personality disorders may be valuable in validating the stability of behaviors for individuals with ADHD. In 1993, Fisher, Barkley, Fletcher, and Smallish examined the stability of behaviors in children, ages 4 to 12 years old with and without ADHD, through adolescence and early adulthood in an 8-year follow-up study. Behaviors studied included somatic complaints, social and emotional withdrawal, anxiety, depression, difficulties in school, attentional problems, cognitive deficits, aggression and delinquency. Their results indicated that children assessed as being hyperactive showed more deviant behaviors as adolescents and young adults than control subjects. Their findings suggest continued evidence for both internalizing and externalizing behavioral pathology at follow-up.

Hellgren, Gillberg, Bagenholm, & Gillbert (1994) conducted a study of 7 year old children diagnosed with deficits in attention, motor control, and perception. Certain clinical disorders, such as bipolar and anxiety

disorders, and a variety of personality disorders were found to persist at age 16. Personality characteristics established early in life have been found to contribute significantly to personality and behavioral patterns in children and adults (Klein, 1987; Lufi & Parish-Plass, 1995).

In a review of follow-up studies of adolescents with ADHD, Klein and Mannuzza (1991) found that males were nine times more likely than females to exhibit high rates of behavioral problems including restlessness, hyperactivity, impulsivity, attentional problems and antisocial behaviors into adulthood. The authors note that there were fewer female participants in the studies they reviewed which would indicate that males do not necessarily have a poorer prognosis than females.

Neurological Studies

During the past two decades an increased interest in the etiology of ADHD has promoted advances in ADHD research technology while providing a new conceptualization for the different types of ADHD - combined type, primarily hyperactive type, primarily impulsive type, and/or primarily inattentive type (DSM-IV, 1994). This new conceptualization supports neurological models related to the etiology of ADHD and is directed toward finding a specific brain abnormality or malfunction that could help explain the heterogeneous

nature of ADHD characteristics (Riccio, Hynd, Cohen, & Gonzalez, 1993; Colby, 1991; and Zametkin, Nordahl, Gross, King, Semple, Runsey, Hamburger, & Cohen, 1990).

Riccio, Hynd, Cohen, and Gonzalez (1993) studied attentional mechanisms from neuroanatomical, neurochemical, and neurophysiological perspectives. Their neuroanatomical research suggests that specific areas within the brain are responsible for the interaction and regulation of attentional mechanisms and inhibition of motor activity. Their neurochemical studies suggest that specific neurotransmitters are responsible for the communication links along neural circuits and that malfunctions in these links may be associated with ADHD. In their neurophysiological research, findings suggest that the relationship between the neurochemical and the neuroanatomical functions serve to regulate the complex interactions responsible for inhibiting and arousing attentional mechanisms.

Swanson, Posner, Potkin, Bonforte, Youpa, Fiore, Cantwell, and Crinella (1991) maintain that researchers, attempting to identify a neurological basis for ADHD, have not been able to map any attentional or behavioral descriptors associated with any specific cognitive or neural systems. They disagree with the findings of Riccio, et al (1993) and agree with Barkley (1990) who believes that the

attentional component of ADHD is a failure to sustain focused attention (volitional inhibition).

Colby (1991) does not find it surprising that researchers have encountered difficulties in mapping specific components associated with attentional deficits given the number of brain structures and neural systems responsible for the differing mechanisms associated with the attentional process. He perceives attention as a distributed process in which sensory responses are regulated by neural components activated by external or internal stimuli. Colby (1991) agrees with the theory that a distinct connection exists between attentional processes and specific neurochemical and neuroanatomical components which activate depending upon whether a stimulus is external or internal.

Despite these difficulties in mapping the neural systems underlying specific behaviors, Zametkin, Nordahl, Gross, King, Semple, Runsey, Hamburger, & Cohen (1990) maintain that there is evidence that some type of structural or morphological difference exists in the brain structure and activity of ADHD individuals as compared to normative groups. Individuals with ADHD were studied by Zametkin, et al (1990) using positive emission tomographic (PET) scans. The authors found decreased brain activity levels in the superior prefrontal and premotor regions areas believed to

control attention and movement (Mattes, 1980; Evans, Gualtieri & Hicks, 1986; Chelune, Ferguson, Koon & Dickey, 1986). Findings of the Zametkin, et al (1990) studies also showed diminished amounts of whole brain glucose, the brain's source of energy, in the right frontal lobes of individuals with ADHD, when compared to PET's of dysphasic and normal control groups. In conjunction with the frontal lobe findings, dysfunction of the caudate nucleus located within the basal ganglia and believed to be a determinant of motor regulation and behavioral inhibition (Lou, Henriksen, Bruhn, Borner, & Nielsen, 1989; Zambelli, Stamm, Maitinsky, & Loiselle, 1977; and Pontius, 1973) has also been implicated in the neurological basis of ADHD. Decreased blood flow and metabolism in the right caudate nucleus has been found to indicate dysfunctional processes in motor regulation and behavioral inhibition and to signify the characteristic range of behaviors traditionally associated with ADHD (Zametkin, et al, 1990). The normal "right greater than left" asymmetry of the caudates, studied through the use of Magnetic Resonance Imaging (MRI) techniques, appears to be absent in individuals with ADHD when compared to normative groups studied suggesting that the structures associated with ADHD are located in the right

hemisphere of the brain (Lou, Henriksen, Bruhn, Borner, & Nielsen, 1989; Pontius, 1973; and Zambelli, Stamm, Maitinsky, & Loiselle, 1977;).

Criterion Based Studies

Evidence of the characteristic signs of ADHD (inattention, hyperactivity and impulsivity) identified prior to the age of 7 is one of the core requirements for making a diagnosis of ADHD (DSM-IV, 1994; Wender, 1987, 1995). These characteristic signs of ADHD serve as essential variables for consideration in the diagnosis and treatment of ADHD. Klein (1987) and Lufi and Parish-Plass (1995) defined specific factors including external locus of control, low levels of persistence (persistence defined as "the ability to sustain one's activity for an extended period of time") and high levels of anxiety that appear to dominate and direct the behaviors of the child and adult with ADHD.

Wender (1987) attempted to resolve the problem of accurately assessing adults with ADHD by developing criteria for ADHD in adolescents and adults which include seven behavioral characteristics frequently present in these age groups. These characteristics include persistent motor hyperactivity, attentional difficulties, affective lability, disorganization, inability to complete tasks, hot temper, explosive short-lived outbursts, impulsivity, and emotional

over-reactivity. Individuals may not exhibit all characteristics but must have experienced the core symptoms of attentional difficulty and hyperactivity in order for a diagnosis of ADHD to be made using the Wender criteria. Wender (1987) postulates that cognitive deficits experienced in adulthood are residual symptoms of biological abnormalities stemming from childhood. In order to be diagnosed with ADHD using Wender's (1987) criteria, the following conditions must be present in adulthood: (1) the individual must have a childhood history of ADHD symptoms, evident prior to the age of 7, which include both attentional deficits and increased motor activity; and (2) two of five other characteristics must also be present: affective lability, disorganization and inability to complete tasks, explosive temper, impulsiveness, and low stress tolerance.

Although Wender (1987) does not include criteria for individuals without hyperactivity, individuals without the hyperactivity component have been found to exhibit many of the same symptoms such as sustained attentional difficulties, disorganization, and/or impulsivity as individuals with the hyperactivity component (Dykman & Ackerman, 1993; and Lahey, Schaughency, Hynd, Carlson, & Nieves, 1987). Weiss (1992) and Hallowell and Ratey (1994) have also attempted to narrow the criteria for diagnosis of

ADHD in adolescents and adults. Hallowell and Ratey (1994) have defined 20 characteristics of adult ADHD, including a sense of underachievement, difficulty with organization, procrastination, involvement in many projects at one time with little follow through, a tendency to say whatever comes to mind (tactless and at times hurtful while attempting to pass off remarks as teasing), searching for high stimulation such as taking risks, driving fast and living on the edge, easily bored with little tolerance for the absence of stimulation, creative and intelligent (Dr. Hallowell describes creativity as "impulsivity gone right"), difficulty in going through established channels, worrying about everything, unpredictable mood swings and a family history of depression. Weiss' (1992) criteria includes problems with instability in relationships, frequent job changes, mood swings, anxiety, depression, disorganization, poor judgment, inability to finish a task, feelings of frustration and failure, and problems with repeated mistakes, attentional difficulties, impulsivity and either over-activity or under-activity as her criteria for identifying adults with ADHD.

Ward, Wender, and Reimherr (1993) designed The Wender-Utah Rating Scale (WURS) for use in the retrospective diagnosis of ADHD in adolescents and adults based on the Wender (1987) criteria. The WURS is a self-report measure

consisting of 61 items for describing childhood behaviors and produces a single score. Items are rated by the individual on a scale of 0 to 4 for identifying specific behavioral symptoms believed by the authors to be representative of typical ADHD behaviors experienced as a child (0 = not at all or very slightly; 1 = mildly; 2 = moderately; 3 = quite a bit; and, 4 = very much). Ward, Wender, and Reimherr (1993) administered the WURS to 251 subjects and selected the 25 items showing the greatest mean differences as indicative of the presence of adult ADHD (see Table 1). Subjects tested consisted of 100 "normal" adults, 70 psychiatric adult outpatients with unipolar depression, and 81 adult outpatients with ADHD. A cut-off score of 36 was established as indicative of ADHD based on those 25 items showing the greatest mean differences. Scores on 23 of the 25 items with the greatest mean difference were reported as significantly higher for the ADHD subjects. A cut-off score of 36 or higher was reported by the authors as correctly identifying 96% of the ADHD as well as 96% of the normal subjects. There have been no other validation or reliability studies conducted to date on the WURS (P. H. Wender, personal communication, February 7, 1996).

Table 1

Twenty-five items with greatest mean differences (Ward, Wender, and Reimherr, 1993).

WURS Item	Adults With Attention Deficit Hyperactivity Disorder (N=81)		Normal Comparison Subjects (N=100)		Depressed Comparison Subjects (N=70)	
	Mean	SD	Mean	SD	Mean	SD
Individual items						
Concentration problems, easily distracted	3.3	0.9	0.7	0.9	1.3	1.4
Anxious, worrying	2.8	1.1	1.1	1.0	2.1	1.3
Nervous, fidgety	3.1	0.9	0.6	0.9	1.7	1.4
Inattentive, daydreaming	3.2	1.0	0.6	0.8	1.7	1.4
Hot- or short-tempered, low boiling point	2.7	1.3	0.8	1.0	1.0	1.2
Temper outbursts, tantrums	2.4	1.2	0.6	0.9	1.0	1.5
Trouble with stick-to-it-tiveness	3.0	1.1	0.7	0.9	1.3	1.3
Stubborn, strong-willed	3.1	1.1	1.4	1.2	1.7	1.2
Sad or blue, depressed, unhappy	2.2	1.2	0.4	0.7	2.0	1.4
Disobedient, rebellious, sassy	2.4	1.4	0.5	0.7	0.7	1.1
Low opinion of myself	2.6	1.3	0.7	0.8	2.2	1.5
Irritable	2.4	1.1	0.4	0.6	1.2	1.1
Moody, ups and downs	2.8	1.0	0.8	0.8	1.8	1.3
Angry	2.5	1.2	0.6	0.8	1.4	1.3
Trouble seeing things from someone else's point of view	2.3	1.1	0.8	1.2	1.0	0.8
Acting without thinking, impulsive	2.9	1.1	0.8	0.9	1.4	1.2
Tendency to be immature	2.8	1.6	0.7	0.9	1.1	1.1
Guilty feelings, regretful	2.6	1.1	0.6	0.8	1.8	1.4
Losing control of myself	2.2	1.3	0.3	0.6	0.8	1.0
Tendency to be or act irrational	2.0	1.2	0.2	0.5	0.9	1.1
Unpopular with other children	1.8	1.3	0.2	0.5	0.8	1.0
Trouble with authorities, trouble with school, visits to principal's office	1.8	1.6	0.2	0.6	0.4	0.8
Overall a poor student, slow learner	1.4	1.4	0.1	0.3	0.5	0.7
Trouble with mathematics or numbers	2.1	1.5	0.5	1.0	1.1	1.4
Not achieving up to potential	3.2	1.0	1.1	1.2	1.8	1.5
Total scores						
Men	60.3	14.2	17.9	11.0	34.2	18.0
Women	65.8	14.3	15.0	8.5	30.5	15.8
All subjects	62.2	14.6	16.1	10.6	31.7	17.4

NOTE: From "The Wender-Utah Rating Scale: An aid in the retrospective diagnosis of childhood attention deficit hyperactivity disorder," by M. F. Ward, P. H. Wender, and F. W. Reimherr, 1993. American Journal of Psychiatry, 150, 887. Copyright 1993 by the American Psychiatric Association. Reprinted with permission of the authors.

In 1989, Copeland published the Copeland Symptom Checklist (CSC) for Adult Attention Deficit Disorder. Copeland developed the CSC to assess the areas and extent of symptomatology associated with adult ADHD on the basis of over 20 years of clinical experience (E. D. Copeland, personal communication, December 8, 1995). This instrument provides scoring information which includes identification of items denoting attention deficit disorder with and without hyperactivity. The CSC contains 63 items divided into 8 categories. The 8 categories were determined to represent the characteristics most commonly associated with adult ADHD, based upon Copeland's personal experience in working with adults with ADHD (E. D. Copeland, personal communication, April 23, 1996). The categories include: Inattention/Distractibility, Impulsivity, Activity Level Problems which is subdivided into two groups - 1) Overactivity/Hyperactivity and Underactivity and 2) Noncompliance, Underachievement/Disorganization/and Learning Problems, Emotional Difficulties, Poor Peer Relations and Impaired Family Relationships. Current behavioral characteristics are rated by the subject, or by someone rating the subject, on a Likert scale of 0 - 3 (0 = not at all; 1 = just a little; 2 = pretty much; and 3 = very much). Scores for each category are calculated based on a total possible score. The percentage for each category is then

determined. Scores between 35% to 49% are reported to indicate mild to moderate difficulties, 50%-69% to moderate to severe difficulties and above 70% - significantly severe difficulties. CSC scores of 70% and above are interpreted by the instrument's author as clinically significant. There have been no other standardization, validation or reliability studies conducted on the CSC (E. D. Copeland, personal communication, April 23, 1996).

CHAPTER 3

METHOD

Subjects

Eighteen male and 74 female, undergraduate and graduate
volunteer college students from a small, southern, liberal
arts university, who ranged in age from 19 to 47 years old
participated in the current study. A previous or current
diagnosis of ADHD was not required for participation. Extra
credit points were awarded for participation in the study at
the discretion of instructors. Informed consent forms
(Appendix A) were obtained at the time of testing. All
participants were treated in accordance with the "Ethical
Principles of Psychologists and Code of Conduct" (American
Psychological Association, 1992).

Materials

The two instruments available for use in the assessment
of adults with ADHD, and used in the current study, were the
Wender-Utah Rating Scale (WURS) designed by Ward, Wender,
and Reimherr (1993) (Appendix B) and the Copeland Symptom
Checklist (CSC) for Adult Attention Deficit Disorder
developed by Copeland (1989) (Appendix C). The WURS is a 61
item, self-report checklist for use as an aid in the
retrospective diagnosis of adult ADHD. Items are rated by
the individual on a scale of 0 to 4 for identifying specific
behavioral symptoms believed to be representative of typical
ADHD behaviors experienced as a child (0 = not at all or

very slightly; 1 = mildly; 2 = moderately; 3 = quite a bit; and, 4 = very much). Split-half reliability correlations of odd and even items, using Spearman-Brown corrected correlations, showed satisfactory internal reliability, $r = 0.90$. Pearson correlation coefficients calculated on the WURS and a Parent Rating Scale, which was a 10-item modified version of the Conner's Abbreviated Rating Scale for ADHD and normal subjects, showed moderate correlations for the normal subjects, $r = 0.49$, and subjects with ADHD, $r = 0.41$. Based on the 25 items with the greatest mean differences, a cut-off score of 36 or higher was reported by the authors as correctly identifying 96 percent of subjects with ADHD. No significant differences were found within groups for age differences (mean age for the ADHD group was 30.7 years, SD = 5.7 and for the normal comparison group was 42.5, SD = 5.4). No other validation or reliability studies have been conducted on the WURS (P. H. Wender, personal communication, February 7, 1996). The cut-off score of 36, for the 25 critical items established by Ward, Wender, and Reimherr (1993) was used in the current study.

The CSC (Copeland, 1989) was developed for use in the assessment of current symptomatology associated with adult ADHD. The CSC contains 63 statements divided into 8 categories consisting of Inattention/Distractibility, Impulsivity, Activity Level Problems, Noncompliance,

Underachievement/Disorganization/ Learning Problems, Emotional Difficulties, Poor Peer Relations, and Impaired Family Relationships. Each statement is designed to identify current behavioral symptoms and/or characteristics of the individual being rated. The CSC is completed by the individual, or by someone rating the individual, on items indicating the degree, on a scale of 0-3, to which the behavior is characteristic of that individual. Scores for each category were calculated based on the total possible score. The percentage for each category was determined and scores between 35-49% were used to indicate mild to moderate difficulties; 50-69% - moderate to severe difficulties; and, above 70% - significantly severe difficulties. No standardization, validity, or reliability studies have been conducted on the CSC (E.D. Copeland, personal communication, April 23, 1996).

Procedures

Informed consent forms were distributed for completion and signature. Consent forms were collected separately from the test instruments to ensure anonymity. The WURS and the CSC were group administered and took approximately 15 minutes to complete. Subjects were advised that the current study was not being conducted for the purpose of identifying

individuals with ADHD but as a correlational study for the purpose of comparing the constructs being measured by the WURS and the CSC.

Results

A multiple regression revealed a significant correlation between the subscales of the Copeland Symptom Checklist (CSC) for Adult Attention Deficit Disorder and scores obtained on the Wender-Utah Rating Scale (WURS), $R = .755$, $p < .001$. and $R^2 = .569$. Pearson correlations indicated that all subscales of the CSC were significantly correlated ($p < .001$) with the WURS (see Table 2). Intercorrelations among the CSC subscales and the WURS were also found to be significant ($p < .001$).

A latent roots factor analysis, using a varimax rotation, yielded an eigenvalue of 5.571 which accounted for 69.641% of the variance on the CSC. This finding strongly suggests that there is a single factor underlying the CSC. Factor loadings of category scores ranged from .736 to .902 for this single factor. The percentage of items checked for each category of the CSC are shown in Table 3 for comparison with Copeland's (1989) findings.

Table 2

Correlation Matrix for CSC Subscale Scores

	C1	C2	C3	C4	C5	C6	C7	C8	WURS
C1	1.000								
C2	0.825	1.000							
C3	0.829	0.827	1.000						
C4	0.517	0.613	0.627	1.000					
C5	0.727	0.742	0.771	0.551	1.000				
C6	0.566	0.615	0.659	0.637	0.657	1.000			
C7	0.498	0.498	0.512	0.551	0.568	0.560	1.000		
C8	0.695	0.706	0.705	0.611	0.689	0.648	0.629	1.000	
WURS	0.617	0.656	0.657	0.553	0.631	0.614	0.548	0.530	1.00

NOTE: C1 - C8 correspond with subscale categories.

Table 3

Percentage of items checked by group and category on CSC
(Copeland, 1989)

	Percentages of Items Checked (Averaged for Group)			
Category	ADHD/ADD[1] N = 80 Mean %	NonADHD ADD[2] N = 23 Mean %	Control Group[3] N = 109 Mean %	Current Study[4] N = 92 Mean %
I. Inattention/ Distractibility	57%	20%	26%	35%
II. Impulsivity	57%	20%	27%	45%
III. Activity-Level Problems:				
a) Overactivity	48%	16%	25%	23%
b) Underactivity	45%	15%	20%	16%
IV. Noncompliance	41%	11%	14%	12%
V. Underachievement Disorganization Learning Problems	47%	14%	17%	21%
VI. Emotional Difficulties	50%	15%	22%	30%
VII. Poor Peer Relations	39%	14%	16%	11%
VIII. Impaired Family Relations	46%	8%	19%	14%

[1]Self-identified or diagnosed as Adult ADHD/ADD.
[2]Self-identified as Non-ADHD/ADD.
[3]Control Group of Teachers "considered to be similar to the population at large".
[4]Individuals not identified as ADHD/ADD in current study.
NOTE: "Adult ADD," material assembled by the Southeastern Institute for Developmental and Behavioral Medicine, by S. C. Copps and E. D. Copeland, 1989. Adapted with permission of the authors.

Twenty-eight percent of the subjects tested using the CSC met the instrument's requirements to be classified as ADHD, with scores falling between 35-70% and above. A breakdown of scores obtained on the CSC showed that 16 subjects scored in the mild to moderate range of 35-49%; 8 subjects scored in the moderate to severe range of 50-69%; and 2 subjects scored in the 70% and above range indicating significantly severe difficulties.

Twenty-six percent of the subjects tested using the WURS met the requirements for being classified as having characteristics indicative of the presence of ADHD, using Wender's cut-off score of 36 for the 25 items with the greatest mean difference. Further evaluation of the WURS showed that scores for the subjects tested in the current study ranged from 20 to 128 for the 25 critical items established by Ward, Wender, and Reimherr (1993).

The purpose of the current study was to determine if a relationship existed between the scores obtained on the Copeland Symptom Checklist (CSC) for Adult Attention Deficit Disorder, for the current identification of adults with ADHD and scores obtained on the Wender-Utah Rating Scale (WURS) used as an aid for the retrospective diagnosis of childhood ADHD. Scores obtained for the 8 categories of the CSC appear to reasonably predict the scores obtained on the WURS. Significant correlations and intercorrelations found between the subscales of the CSC and scores obtained on the WURS indicate that the CSC and the WURS are measuring the same constructs. However, there appears to be only one contributing factor on the CSC that is related to ADHD in adults rather than 8 as indicated by Copeland (1989).

With 28% of the subjects in the current study meeting the CSC's classification requirements for adult ADHD, it would seem that the CSC is most likely over-diagnosing adults with ADHD. Twenty-six percent of the subjects tested in the current study met the cut-off score of 36 established by Ward, Wender, and Reimherr (1993) as indicative of adult ADHD. This suggests that the WURS may also be over-diagnosing adult ADHD. The authors of the WURS reported that using 36 or higher as the cut-off score correctly identified 96% of their subjects with ADHD. However, there

is a considerable overlap of scores as reported by Ward, Wender, and Reimherr (1993) for the groups categorized as "normals" with scores ranging from 0 to 49; scores for individuals with ADHD ranging from 15 to 96; and scores for individuals with unipolar depressing ranging from 6 to 75. This overlap in scores for the three groups makes it difficult to determine how cut-off scores were actually established. Since a childhood history of ADHD symptoms, prior to the age of 7, is required for a diagnosis of adult ADHD using the WURS, it would seem that the use of the WURS in the assessment of adult ADHD is not necessary.

If remote memories and perceptions of childhood behaviors are accurate, as required by the WURS for the retrospective diagnosis of childhood ADHD, then it would seem to suggest that the characteristic traits associated with adult ADHD endure into adulthood. However, coping skills and abilities developed from the necessity to conform to societal norms and expectations may overshadow memories for details associated with early life experiences. Another factor that could affect the retrospective diagnosis of childhood ADHD is that it may be very difficult for some people to honestly respond when questioned about personal beliefs, experiences, faults, or problems.

Based on the current study's findings, using the WURS or the CSC in the assessment of adult ADHD, would most

likely result in classification of over one-fourth of the adult population as possessing the characteristic traits associated with adult ADHD. This is an interesting finding when we consider that prevalence estimates of 3-5% of school-aged children diagnosed with ADHD suggests that approximately 1-2% of these children may continue to endure symptoms of ADHD into adulthood (Barkley, 1990; Klee, Garfinkel, & Beauchesne, 1986; Weiss, Hechtman, Milroy, & Perlman, 1979; Shekim, Asarnow, Hess, Zaucha, & Wheeler, 1990). The high percentages of subjects qualifying for a diagnosis of adult ADHD in the current study may be attributable to situational factors related to the time of testing or dispositional factors. Subjects participating in the current study were tested at the end of the school term and may have been more likely to endorse characteristics associated with ADHD as a result of anxieties felt regarding final exams or assignments that were due. Or, the subjects may have overly critical perceptions of their own personality and behavioral traits, causing them to endorse symptoms associated with adult ADHD. Caution in using either of these two instruments is advised in light of their lack of standardization and possible over-diagnosis of adult ADHD.

The heterogeneous nature of ADHD further complicates the process of accurately identifying adults with ADHD

(Wender, 1987, 1995). Recent research suggests that the attentional component of ADHD may be biological in nature (Colby, 1991; Riccio, et al, 1993; Zametkin, et al, 1990). But, despite the emergence of this important research in the etiology of ADHD, it is very unlikely that evidence for the neurological basis of ADHD will be established without reliable, operationalized criteria upon which such research can be based. The consequences of undiagnosed, misdiagnosed, and untreated ADHD in adolescents and adults results in continued frustrations and conflicts in social, career, and family interactions.

Diagnosis of adult ADHD requires the use of a comprehensive assessment battery including interviews, medical and family histories, valid and reliable rating scales and checklists, observations of related behaviors in various environments, personality inventories, and cognitive, academic and intellectual assessments (Barkley, 1991; Fischer, Barkley, Fletcher, & Smallish, 1993; Wender, 1987, 1985). Careful differential diagnosis to ascertain the comorbidity of other behavioral problems is also necessary to aid in the diagnosis of ADHD in adults (Cadoret & Stewart, 1991; Dykman & Ackerman, 1993; Gittelman, Mannuzza, Shenker, & Bonagura, 1985; Herrero, Hechtman, & Weiss, 1994; Lilienfeld & Waldman, 1990).

Accurate and effective assessment and treatment of adults with ADHD depends upon experience and knowledge of adult ADHD and its associated behavioral characteristics. Determination of which instrument or method to use in the assessment of adult ADHD will most likely remain a matter of personal and professional choice and should be based upon the best information, methods, and instruments available.

The findings of the current study emphasize the need for further reserach and development of empirically sound instruments and methods for use in assessing adult ADHD. Subsequent studies designed to help determine the most salient characteristics of ADHD in adults are also implicated.

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APPENDIXES

Appendix A

DEPARTMENT OF PSYCHOLOGY

AUSTIN PEAY STATE UNIVERSITY

INFORMED CONSENT STATEMENT

The purpose of this experimental study is to investigate the extent of agreement and/or disagreement between items used on the Wender-Utah Rating Scale for the retrospective diagnosis of childhood attention deficit hyperactivity disorder and items used on the Copeland Symptom Checklist for Adult Attention Deficit Disorder. The current study is being conducted by Chris Ceretti under the direction of Dr. Charles Grah of the Austin Peay State University Psychology Department (648-7231). No persons, other than the investigator and her supervisor, will have access to the data collected during the current study. Information collected will be used solely for the purpose of analysis pertaining to this study. No personally identifying information will be used on either instrument administered. Your participation is completely voluntary and you are free to terminate your participation at any time.

Thank you for your cooperation.

I agree to participate in the present study being conducted by Chris Ceretti, Psychology Graduate Student, under the direction of Dr. Charles Grah, Professor, Department of Psychology, Austin Peay State University. The investigator has offered to answer any further questions I may have regarding the purpose and procedures of this study. I understand that I am free to terminate my participation at any time and to have all data obtained from me withdrawn from the study and destroyed at such time.

_____

Name (Please Print)

_____

Signature

_____

Date

Appendix B

WENDER-UTAH RATING SCALE (WURS)

PATIENT'S INITIALS _____ PATIENT'S NUMBER _____ DATE _____ M.D.'s INITIALS _____

AS A CHILD I WAS (OR HAD):	Not at all or very slightly	Mildly	Moderately	Quite a Bit	Very Much
1. Active, restless, always on the go					
2. Afraid of things					
3. Concentration problems, easily distracted					
4. Anxious, worrying					
5. Nervous, fidgety					
6. Inattentive, daydreaming					
7. Hot or short tempered, low boiling point					
8. Shy, sensitive					
9. Temper outbursts, tantrums					
10. Trouble with stick-to-it-tiveness, not following through, failing to finish things started					
11. Stubborn, strong willed					
12. Sad or blue, depressed, unhappy					
13. Uncautious, dare-devilish, involved in pranks					
14. Not getting a kick out of things, dissatisfied with life					
15. Disobedient with parents, rebellious, sassy					
16. Low opinion of myself					
17. Irritable					
18. Outgoing, friendly, enjoy company of people					
19. Sloppy, disorganized					
20. Moody, have ups and downs					
21. Feel angry					
22. Have friends, popular					
23. Well organized, tidy, neat					
24. Acting without thinking, impulsive					
25. Tend to be immature					
26. Feel guilty, regretful					
27. Lose control of myself					
28. Tend to be or act irrational					
29. Unpopular with other children, didn't keep friends for long, didn't get along with other children					
30. Poorly coordinated, did not participate in sports					

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AS A CHILD I WAS (OR HAD):	Not at all or very slightly	Mildly	Moder- ately	Quite a Bit	Very Much
31. Afraid of losing control of self					
32. Well coordinated, picked first in games					
33. (for women only) Tomboyish					
34. Ran away from home					
35. Get in fights					
36. Teased other children					
37. Leader, bossy					
38. Difficulty getting awake					
39. Follower, led around too much					
40. Trouble seeing things from someone else's point of view					
41. Trouble with authorities, trouble with school, visits to principal's office					
42. Trouble with the police, booked, convicted					
MEDICAL PROBLEMS AS A CHILD:					
43. Headaches					
44. Stomachaches					
45. Constipation					
46. Diarrhea					
47. Food allergies					
48. Other allergies					
49. Bedwetting					
AS A CHILD IN SCHOOL:					
50. Overall a good student, fast					
51. Overall a poor student, slow learner					
52. Slow in *learning* to read					
53. Slow reader					
54. Trouble reversing letters					
55. Problems with spelling					
56. Trouble with mathematics or numbers					
57. Bad handwriting					
58. Though I could read pretty well, I never really enjoyed reading					
59. Did not achieve up to potential					
60. Repeated grades (which grades?) _____					
61. Suspended or expelled (which grades?) _____					

SPI

COPELAND SYMPTOM CHECKLIST
FOR ADULT ATTENTION DEFICIT DISORDERS

**Attention Deficit Hyperactivity Disorder (ADHD)
and Undifferentiated Attention Deficit Disorder (ADD)**

This checklist was developed from the experience of many specialists in the field of Attention Disorders and Hyperactivity. It is designed to help determine whether you, or someone you are rating, has ADHD or ADD, to what degree, and if so, in which area(s) difficulties are experienced. Please mark all statements. Thank you for your assistance in completing this information.

Name _____ Date _____

Completed by _____

Directions: Place a checkmark (✓) by each item below, indicating the degree to which the behavior is characteristic of yourself or the adult you are rating.

	Not at all	Just a little	Pretty much	Very much	Score	%
I. INATTENTION/DISTRACTIBILITY, especially						
1. A short attention span, especially for low-interest activities.						
2. Difficulty completing tasks.						
3. Daydreaming.						
4. Easily distracted.						
5. Nicknames such as: "spacey," or "dreamer."						
6. Engages in much activity but accomplishes little.						
7. Enthusiastic beginnings but poor endings.					_ - _ % 21	
II. IMPULSIVITY						
1. Excitability.						
2. Low frustration tolerance.						
3. Acts before thinking.						
4. Disorganization.						
5. Poor planning ability.						
6. Excessively shifts from one activity to another.						
7. Difficulty in group situations which require patience and taking turns.						
8. Interrupts frequently.					_ - _ % 24	
III. ACTIVITY LEVEL PROBLEMS						
A. Overactivity/Hyperactivity						
1. Restlessness — either fidgetiness or being constantly on the go.						
2. Diminished need for sleep.						
3. Excessive talking.						
4. Difficulty listening.						
5. Motor restlessness during sleep. Kicks covers off — moves around constantly.						
6. Dislike of situations which require attention & being still—church, lectures, etc.					_ - _ % 18	
B. Underactivity						
1. Lethargic.						
2. Daydreaming, spaciness.						
3. Failure to complete tasks.						
4. Inattention.						
5. Lacking in leadership.						
6. Difficulty in getting things done.					_ - _ % 18	

COPELAND SYMPTOM CHECKLIST FOR ADULT ATTENTION DEFICIT DISORDERS (Continued)

	Not at all	Just a little	Pretty much	Very much
IV. NONCOMPLIANCE				
1. Does not cooperate. Determined to do things own way.				
2. Argumentative.				
3. Disregards socially-accepted behavioral expectations.				
4. "Forgets" unintentionally.				
5. "Forgets" as an excuse (intentionally).				

10 ___ - ___ %

	Not at all	Just a little	Pretty much	Very much
V. UNDERACHIEVEMENT/DISORGANIZATION/LEARNING PROBLEMS				
1. Underachievement in relation to ability.				
2. Frequent job changes.				
3. Loses things — keys, wallet, lists, belongings, etc.				
4. Auditory memory and auditory processing problems.				
5. Learning disabilities or learning problems.				
6. Poor handwriting.				
7. "Messy" or "sloppy" work.				
8. Work assignments are often not completed satisfactorily.				
9. Rushes through work.				
10. Works too slowly.				
11. Procrastinates. Bills, taxes, etc., put off until the last minute.				

33 ___ - ___ %

	Not at all	Just a little	Pretty much	Very much
VI. EMOTIONAL DIFFICULTIES				
1. Frequent and unpredictable mood swings.				
2. Irritability.				
3. Underreactive to pain/insensitive to danger.				
4. Easily overstimulated. Hard to stop once "revved up."				
5. Low frustration tolerance. Excessive emotional reaction to frustrating situations.				
6. Angry outbursts.				
7. Moodiness/lack of energy.				
8. Low self-esteem.				
9. Immaturity.				

27 ___ - ___ %

	Not at all	Just a little	Pretty much	Very much
VII. POOR PEER RELATIONS				
1. Difficulty following the rules of social interactions.				
2. Rejected or avoided by peers.				
3. Avoids group activities; a loner.				
4. "Bosses" other people. Wants to be the leader.				
5. Critical of others.				

15 ___ - ___ %

	Not at all	Just a little	Pretty much	Very much
VIII. IMPAIRED FAMILY RELATIONSHIPS				
1. Easily frustrated with spouse or children. Overreacts. May punish children too severely.				
2. Sees things from own point of view. Does not negotiate differences well.				
3. Underdeveloped sense of responsibility.				
4. Poor manager of money.				
5. Unreasonable; demanding.				
6. Spends excessive amount of time at work because of inefficiency, leaving little time for family.				

18 ___ - ___ %

TOTAL ___ - ___ %

184