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GENDER DIFFERENCES IN ATTENTION DEFICIT/ HYPERACTIVITY DISORDER : MISCONCEPTIONS AND THEIR IMPACT ON THE DIAGNOSIS OF AD/HD IN FEMALES

A dissertation submitted to the Wright Institute

Graduate School of Psychology in partial fulfillment of the requirements

for the Degree of Doctor of Philosophy in Psychology

by

EMILY DE LA ROSA

MAY 1997

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EMILY DE LA ROSA

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CERTIFICATION OF APPROVAL

I certify that I have read GENDER DIFFERENCES IN ATTENTION DEFICIT/ HYPERACTIVITY DISORDER: MISCONCEPTIONS AND THEIR IMPACT ON THE DIAGNOSIS OF AD/HD IN FEMALES by Emily De La Rosa, and that in my opinion this work meets the criteria for approval of a dissertation submitted in partial fulfillment of requirements for the degree of Doctor of Philosophy in Psychology at the Wright Institute Graduate School of Psychology.

Valory Mitchell, PhD — 5/20/97

Valory Mitchell, Ph.D. — Date

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May 1997

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by

EMILY DE LA ROSA

ABSTRACT

Attention Deficit/Hyperactivity Disorder is a chronic heterogeneous disorder of unknown etiology that effects children, adolescents, and adults. The disorder is considered to be 2-9 times more prevalent in boys than in girls, however less is known about the syndrome in girls because most studies of AD/HD focus primarily or exclusively on boys.

The AD/HD literature was reviewed. The author hypothesized that generalizations are made about the disorder's manifestations in girls based on studies conducted solely or primarily on boys, and that these misconceptions influence who is referred for AD/HD evaluations.

A questionnaire, designed for this study, was administered to 73 child psychologists, child psychiatrists, and pediatricians. A first section asked about practitioner's experience, work settings, familiarity with the descriptions of AD/HD, attitudes and beliefs about medication, and opinions about AD/HD. Another section compared practitioner's beliefs about the way that AD/HD manifests in boys and girls. A third section rated beliefs about the disorder's symptoms in children, and the fourth used identical items to assess beliefs about the disorder's symptoms in females.

Practitioners rated "children" significantly differently than "girls" on 17 of 30 AD/HD characteristics. "Children" were viewed as significantly more likely than "girls" with AD/HD to

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exhibit the following behaviors: having difficulty sustaining attention, doing sloppy work, fidgetty, moving at a fast tempo, being overtly physically aggressive, acting as if driven by a motor, having difficulty playing quietly, having difficulty awaiting their turn, often leaving their seat, running or climbing excessively, interrupting or intruding on others, and blurting out answers before questions are completed. Children who are well behaved or sluggish are rarely described as having AD/HD, however girls are considered significantly better behaved and more sluggish.

Results demonstrate that while practitioners are aware of differences in the way AD/HD manifests in each gender, generalizations about AD/HD in children are made based on how the disorder typically manifests in boys. The results support the hypothesis that practitioners show greater awareness of the symptom patterns typical of males than of females. These findings help to explain why males are being identified with AD/HD and treated in greater numbers than females.

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ACKNOWLEDGEMENTS

...Biting my truant pen, beating myself for spite:
Fool! said my Muse to me, look in thy heart and write.
- Sir Philip Sidney, *Astrophel and Stella*

The process of writing this dissertation ranks as one of the loneliest experiences I have had. However, I could not have completed it without help from colleagues and friends who have worked with me on this project over the last two years. I will forever be grateful to Valory Mitchell, Ph.D, and Lynn E. Ponton, M.D., for agreeing to be on my dissertation committee. They guided me through this process, and encouraged me. Most of all, they helped me realize that I could write a piece that is worthwhile. I thank them for being wonderful mentors.

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Many, many thanks go to the pediatricians, child psychiatrists, child psychologists, and psychiatric social workers of Kaiser Permanente in Northern California. I especially want to thank Roman Rodriguez, M.D., my department chief and colleague, who supported me in his own inimitable way, and the South San Francisco Kaiser Child and Adolescent Service staff for their critique of the survey tool. Daniel Seffinger, Ph.D, who joined my dissertation committee in the final stages of the project, has been inspiring in his dedication to this patient population. I would also like to thank Thomas Brady, M.D., and the members of Northern California ROCAP for graciously allowing me to attend their annual meeting and for agreeing to fill out the survey.

Throughout this process my family and friends have been unwavering in their support of me. Anette, my dear partner, I deeply appreciate and thank for believing in me and in this project. Without her encouragement and willingness to keep the family going, this thesis would not have been completed. She deserves a doctoral degree for what she has done for me in these past two years. And Maya, my daughter, has graciously allowed me to write, instead of being with her. I eagerly look forward to spending more time playing with her and to family time for all of us ! To my friends, now I can finally start to return your phone calls. Thank you for your patience, encouragement, and good humor.

Lastly, I wish to thank the patients and families who must go unnamed. They have taught me so much about how AD/HD manifests and how it effects their daily lives. I hope I have put this knowledge to good use.

Emily De La Rosa

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DEDICATION

If a little dreaming is dangerous, the cure for it is not to dream less but to dream more, to dream all the time.

Marcel Proust (1871-1922). Remembrance of Things Past, vol. 4, "Within a Budding Grove," pt. 2, "Seascape, with Frieze of Girls"

To my daughter, Maya

may you realize your dreams, as I have mine

and to my family

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Table of Contents

Certification of Approval.. ii

Dissertation Abstract.. iii - iv

Acknowledgements v

Dedication vi

Table of Contents .... vii - ix

Introduction .... 1 - 3

Literature Review .... 4 - 30

A. History of ADHD... 5

1. Early 1900-s through World War II .... 6 - 11

2. World War II through 1960's .... 11 - 12

3. Late 1960's through 1980's .... 12 - 17

4. Late 1980's through the present .... 17 - 21

B.Gender Differences in AD/HD 21

1. Gender differences - 3-6 year old period 24

2. Gender differences - 6-10 year old period 26

3. Hyperactive girls: Impulsivity and sustained attention... 27

4. Gender differences in aggression, conduct, and

peer rejection 28

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5. Gender differences in referral 29

6. Gender differences in medication treatment 30

7. Conclusions 31

Methods .... 32 - 36

A. Sample .... 32 - 33

B. Measure 33

C. Procedure 35

D. Data analysis .... 35 - 36

Results.. 37-51

A. Sample... 37-38

B. Respondents' Knowledge,Biases, and

Beliefs about AD/HD.. 38-42

C. Gender Differences.. 43-46

D. Gender Bias... 46-51

Discussion 52

A. Gender Bias 52

1.Gender Bias in Referrals...................... 52

2.Gender Bias in Perception of Symptoms...... 52-55

B. Sample... 55-57

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Tables

1. Practitioners' years of experience.................... 37

2. Employment settings....................................... 38

3. AD/HD knowledge source................................. 39

4. Practitioners' opinions about psychostimulant
treatment for AD/HD.. 40

5. Practitioners' responses to treatment of boys
with AD/HD... 41

6. Practitioners' responses to treatment of girls
with AD/HD... 41

7. Practitioners' treatment plan for a child
diagnosed with AD/HD without overt aggression..... 42

8. Comparison of rankings of the 10 most typical
AD/HD symptoms in boys/girls................................ 43-45

9. Comparison of Characteristics of "Children" with
AD/HD and "Girls" with AD/HD............................. 47-51

References 58-63

Appendix A - Survey and Cover Sheet 64-76

Appendix B - DSM definitions of ADHD (DSM II, III, III-R, IV). ... 77-80

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INTRODUCTION

Attention Deficit/Hyperactivity Disorder (AD/HD) is the current name given to a chronic heterogeneous disorder of unknown etiology that affects children, adolescents, and adults. Within the past 20 years this condition has become among the most researched and best known of the childhood disorders, since it is one of the most common reasons why children are referred to mental health agencies in the United States (Safer and Allen, 1976; Resnick & McEvoy, 1994). Children with AD/HD may comprise as much as 40% of all referrals to child guidance clinics (DuPaul and Stoner, 1994). The incidence of attention deficit/hyperactivity disorder has been reported as between 2% and 20% of school age children; however, the consensus of opinion seems to be that approximately 3-5% of the pediatric population has AD/HD (APA,1987; Lambert, Sandoval & Sassone, 1978). AD/HD is distressing to those afflicted with the condition and distressing to their parents, teachers, and the community at large. It is highly treatable, albeit incurable.

The disorder is considered to be 2-9 times more prevalent in boys than in girls (APA,1980), however less is known about the syndrome in girls because most studies of AD/HD focus primarily or exclusively on boys. Conclusions are drawn about AD/HD in the female population based on research conducted primarily on boys. Since the disorder can manifest somewhat differently in females, there may be a substantial population of AD/HD females who are undiagnosed and untreated for this debilitating condition (duPaul & Stoner, 1994). The diagnostic consideration

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of AD/HD is crucial, regardless of age or gender, because children, adolescents, and adults with AD/HD can present with learning disabilities, oppositional/defiant disorders, depression, bipolar I and II, anxiety disorders, substance abuse disorders, marital, legal, and vocational problems. With proper diagnosis and treatment of AD/HD and co-morbid conditions, these people have the opportunity to improve the quality of their lives.

For the purpose of this thesis, I have chosen to examine the literature on AD/HD, specifically as it pertains to females. From my review of the literature on this disorder, attendance at AD/HD symposia, and discussion with professionals in the field, I have formulated the following conclusions and questions about AD/HD and gender:

1. I conclude that there are misconceptions about AD/HD in girls. The research literature has too broadly generalized about AD/HD, thereby overlooking important differences that exist in the way males and females present symptoms, both at home and in school.

2. I hypothesize that these misconceptions influence who is referred for AD/HD assessments, with males being referred in larger numbers than females. I will examine this by administering a questionnaire about AD/HD diagnosis and treatment to 30 pediatricians, 30 child psychiatrists, and 30 child psychologists.

3. I hypothesize that practitioners exhibit gender bias because they are more likely to identify aggressive children with AD/HD. Since the literature demonstrates that females with AD/HD demonstrate behaviors less aggressive than males, they are less likely to be identified. I will study this by including in my questionnaire items

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about practitioners' opinions regarding the presence of aggression in patients with AD/HD.

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LITERATURE REVIEW

Overview

Attention Deficit/Hyperactivity Disorder (AD/HD) is the current name given to a chronic heterogeneous disorder of unknown etiology that effects the child, adolescent, and adult population. The prevalence of the disorder has been estimated to range from 2% in primary care pediatric samples (Costello, Costello, Edelbrock,1988) to 6 and 9% in large scale population studies.

The clinical picture of AD/HD is well known and described in detail in the DSM IV (APA, 1994,p.78-85). There are primarily three areas of functioning that are effected in children with AD/HD : impulse control, arousal, and attention. As understanding of this disorder has increased, different aspects of functioning have been considered to be primarily effected. Children with AD/HD have a short attention span, are highly distractible, and have an inability to cut out extraneous stimuli when trying to attend to a task. They are impulsive in behavior and on cognitive tasks. They do not "stop, look, listen". They speak out of turn and impulsively interrupt adults. Overall, they have difficulty regulating their activity to conform to social norms. They tend to have poor frustration tolerance, often have difficulty waiting in line, have difficulty following rules at games, and are often poor losers.

AD/HD is usually first detected by adults involved in the child's daily life: parents and teachers who interact with the child on a daily basis and who can observe them over time (Barkley, 1990).They may not understand that the constellation of symptoms they are encountering comprise AD/HD, and frequently

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both families and teachers alike experience a great deal of frustration and confusion when dealing with children who are afflicted with this condition (DuPaul & Stoner, 1994). The constellation of symptoms, and the degree of symptoms, varies between individuals and may also change over time (Weiss & Hechtman,1993). Partly for those reasons, this condition, that is so well known and frequently described in the literature, may nonetheless be difficult to diagnose (Barkley, 1990).

The current definition, from the recently published DSM-IV (American Psychiatric Association, 1994), describes the predominant features of the disorder. That definition is quoted in appendix B.

History of Attention Deficit Hyperactivity Disorder

"Phil, stop acting like a worm,
the table is no place to squirm."
Thus speaks the father to his son,
severely says it, not in fun.
Mother frowns and looks around,
although she doesn't make a sound.
But Phillip will not take advice,
he'll have his way at any price.
He turns,
and churns,
he wiggles
and jiggles
Here and there on the chair;
"Phil, these twists I cannot bear."

Heinrich Hoffman, 1863 (nursery rhyme; from Comprehensive Textbook of Psychiatry,p.1828)

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Early 1900's through World War II

First Description, 1902

George Still, an English pediatrician, is credited as being the first to present detailed descriptions of children who were brain damaged as a result of gross lesions of the brain and various acute diseases, conditions, and injuries that resulted in brain damage (Still, 1902). Still described these children as having "defects in moral control". He described the children as exhibiting hyperactivity, learning difficulties, conduct disorders, and poor attention. Still thought these characteristics were probably organic, although he suspected environmental factors may also play a role. He also described children whose hyperactivity was not linked to demonstrable brain damage, and occurred seemingly without impairment of intelligence and in the absence of any physical disease. He believed this condition occurred more often in boys than girls.

In his lectures to the Royal College of Physicians (1902) he described 20 children in his clinical practice who were often aggressive, defiant, and resistant to discipline. He described them as being "passionate", and showing little "inhibitory volition". Still also described them as lawless, spiteful and cruel, impaired in attention and quite overactive, accident prone and a threat to other children due to their aggressiveness. Their biological relatives were noted to be more prone to alcoholism, criminality, and affective disorders such as depression and suicide.

Even in this first published description, the link between agressiveness and AD/HD is apparent. Still's descriptions of children at the turn of the century appears to be descriptive of children we would now describe as having AD/HD and

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Oppositional Defiant Disorder or Conduct Disorder. Although the "defect in moral control" could be associated with intellectual retardation, these characteristics could also be present in children with near-normal intelligence. Some of the children had a history of significant brain damage or convulsions, however some did not. A few had associated tic disorders.

Still believed the deficits in moral control, sustained attention, and inhibitory volition were related to each other and to the same underlying neurological deficiency. Improvements in conduct could be achieved by medications or by altering the environment. Nevertheless, he believed the condition was relatively permanent.

Although he noted that some of these children came from chaotic households, he believed that the children he was describing had defects in moral control for biological reasons rather than environmental ones. Only those children for whom adequate attempts to control their behavior have failed were considered under this rubric. He was rather pessimistic about the prognosis for these children and viewed all or most of their behavioral difficulties as biologically determined.

Sex differences. The overwhelming majority of Still's descriptions of gross anti-social, and overtly aggressive behavior were characteristic of boys, rather than girls. According to Still, these symptoms were more common in males than females (3:1) and usually appeared before age 8 years.

The boys he describes in his three lectures evidence more aggressiveness against others than the females, in that their behavior is violent at home, in school, and other surroundings. Overall, the boys threw objects, hit children, stole, and

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were generally destructive. The girls, on the other hand, were described as much less destructive to property and to others outside of the family. Their "lacking in moral control" appeared to be predominantly self-destructive; for example, one 11 year old girl attempted to throw herself out of a third floor window. She was also known to be physically abusive of her younger brothers and sisters. Another girl described by Still was said to be self-willed and difficult to manage. This child was said to have temporarily lost her love for her mother and wished that her mother was dead.

The children that Still described were referred to him because of his interest in children exhibiting behaviors of "defects in moral control", which he defined as "the control of action in conformity with the idea of the good of all" (Still, 1902,p.1008). From this population he was also able to see problems in attention and fidgettiness, or hyperactivity, and a broad range of difficulties with disinhibition. Nonetheless, his sample was somewhat biased in that colleagues knew he was fascinated with this patient population. If he looked for inattention, he may have seen a different population.

What remains in question however, is not whether overt aggressiveness towards others is found more frequently in males, but whether the primary symptoms of AD/HD-- that is, inattention, impulsivity, and overarousal-- are found more frequently in males. While inattention and fidgettiness are also found in females, their aggressiveness appears to be of a form that does not generate as much concern and outrage. Suicidal behavior, sexual precocity, fearfulness, and self-will are of concern, however these behaviors predominantly effect the self, whereas violence towards others, especially when it takes the form of murderous

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rage, and stealing from others outside of the family, are highly criticized, and usually they bring about a strong reaction from institutions in society.[1]

United States : 1920's

In the United States, much of the scientific literature on this constellation of symptoms can be traced to the outbreak of the encephalitis epidemic in 1917-1918. A number of children who survived this brain infection were left with behavioral and cognitive sequelae similar to Still's patients. They were impaired in attention, activity, and impulse control and also were impaired cognitively. These children often were socially disruptive. At the time, the disorder was referred to as "Postencephalitic behavior disorder" and was clearly thought to result from CNS damage. Despite a pessimistic view of the prognosis of these children, there were some successes reported from simply using behavior modification techniques and increased supervision.

In detailed case descriptions, Hohman (1922), Ebaugh (1923), and Strecker and Ebaugh (1924) noted that children who recovered from the acute phase of encephalitis rarely showed evidence of cognitive impairment but often underwent a "catastrophic change" in personality. They became hyperactive, distractible, irritable, antisocial, destructive, unruly, and unmanageable in school. They

---

[1] Even in our present culture we can see evidence of a greater emphasis on the control of overt aggression by looking at political campaign issues. Candidates are much more likely to develop platforms where they campaign aggressively about such issues as violence in the streets and building more prisons. It is generally unheard of, though, to hear candidates talk about doing more to help the depressed and self-destructive even though these symptoms can profoundly affect one's ability to contribute to society. More attention is given to negative behaviors that have consequences outside of the home or family. For example, a man can beat his wife and may get his hand slapped. But if he beats his neighbor's wife, he is more likely to be punished harshly.

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frequently disturbed the entire class and were regarded as quarrelsome and impulsive, and were noted for their failure to respond to discipline.

Physicians also noticed that the same cluster of behavior problems commonly occurred in children who had suffered brain damage from head injuries and other causes, particularly anoxia during delivery, and in adults who had suffered head wounds during World War I. Tredgold (1908) hypothesized that some brain damage could occur in the absence of obvious brain trauma, and remain relatively unnoticed until the early school years. This theory led to the idea that even when brain damage could not be demonstrated it could be presumed to be present, and this idea led to the concept of minimal brain damage.

Sex differences . The early papers do not specify whether there were sex differences among these children.

First Pharmacological Treatment : 1937

Pharmacological treatment for this disorder began with Bradley in 1937,Who treated behavior disordered children in the Emma Pendleton Bradley Home in Providence, Rhode Island. In an effort to rid them of severe headaches by raising their blood pressure (by prescribing benzedrine), Bradley discovered that their behavior and school performance underwent dramatic change. Many of the children showed an increased interest in school work, developed better work habits, and showed a marked reduction in disruptive behavior. He reported that a large proportion became subdued without losing interest in their surroundings. The children called the benzedrine their "arithmetic pills" because they felt they could do problems more accurately and quickly when they were taking the medication. Some

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children also commented on experiencing an improvement in mood, saying they had "joy in my stomach."

Despite these interesting findings, very little exploration into the use of amphetamines occurred in this period. Since very few institutions existed that would take them, children who could not conform to the rules of the classroom remained at home, uneducated or, if their families were well off, were tutored at home or at private boarding schools. It was not until World War II that more research into medication treatment for this constellation of symptoms would take place.

World War II through the 1960's

During this period a substantial body of fetal and animal research strengthened the validity of the concept of *minimal brain damage*. Studies demonstrated a strong link between maternal and fetal factors and behavioral problems. Empirical evidence showed a significant relationship between histories of anoxia and subsequent developmental deviations (Graham, Caldwell, Ernhart, Pennoyer & Hartman, 1957). Animal studies also showed a relationship between behavior disorders and minimal degrees of brain damage (Cromwell, Baumeister & Hawkins, 1963). Because research corroborated the brain-behavior link, brain damage began to be inferred from behavioral signs alone. The hypothesis that all children demonstrating signs of hyperactivity and related characteristics were probably brain injured was first suggested by Strauss and Lehtinen in 1947 and then later explicitly stated in a second volume by Strauss and Kephart (1955). Many professionals accepted the assumption that the spectrum of behaviors exhibited by hyperactive children were unequivocably the result of brain damage.

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Procedures for the special education of these children were adopted that involved minimal stimulation programs in which potential distractions were removed from the students' environment. No empirical evidence tested the efficacy of these programs, however.

In the middle 1950's, psychopharmacology increased in importance. Medications resulted in successful treatments for a spectrum of mood disorders and adult psychiatric illnesses. Along with major tranquilizers and antidepressants came a renewed interest in the use of stimulant medications for children with behavior problems.

Late 1960's to 1980's

In this period research findings and social forces challenged the brain dysfunction theories. Researchers began pointing out the fallacy in the assumption that these symptoms could be pathognomonic of brain damage without any evidence of CNS lesions (Birch, 1964; Herbert, 1964; Rapin,1964). Toward the late 1960's a conference held by the Oxford International Study Group on Child Neurology recommended that the term *minimal brain dysfunction* replace *minimal brain damage,* because brain damage could not be inferred from behavioral signs alone. As a result of this controversy, the term MBD was substituted. Additionally, a task force of the National Institute of Neurological Diseases and Blindness (Clements, 1966) recognized at least 99 symptoms for this disorder. Eventually the concept of MBD lost prominence as it was vague, overinclusive, and lacking in evidence. Its value remained in its focus on neurological evidence rather than

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environmental factors. The term was replaced by labels such as "dyslexia," "language disorder," "learning disabilities," and "hyperactivity."

Laufer and Denhoff (1957) are credited as being the first to use the term "hyperactive child syndrome." Chess (1960) described the hyperactive child as follows: " The hyperactive child is one who carries out activities at a higher than normal rate of speed than the average child, or who is constantly in motion, or both" (p.2379). Clearly, the focal symptom was hyperactivity during this period. This brief description was then entered into the official nomenclature of the Diagnostic and Statistical Manual of Mental Disorders (DSM-II; APA, 1968)[see appendix B for DSM-II quote], under the name Hyperkinetic Reaction of Childhood. Chess described 36 children diagnosed as having physiologic hyperactivity. The ratio of males to females was approximately 4:1, and many were referred prior to age 6 years. She found that educational difficulties were common for this group, particularly underachievment. Many were oppositional and defiant, and had poor peer relationships. Aggressiveness, impulsivity, and short attention span were commonly associated with this condition.

Chess, and others who followed, were also influential because they viewed this condition as a behavioral syndrome that could have an organic base but was not necessarily the result of brain damage,and could result even in the absence of organic pathology. Unlike previous practitioners, Chess was more hopeful about treatment outcome for these children, and recommended a multimodal treatment approach incorporating parent counseling, behavior modification, medication, psychotherapy, and special education; much of this is still recommended today.

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At the time, there was little interest in noting whether there were gender differences in the ways that symptoms manifested, and so we do not know if aggressiveness was greater for males or, for that matter, whether there seemed to be a gendered basis for grouping together a combination of symptoms.

By the middle 1960's, stimulant medication was well established for the treatment of hyperactivity in children (Eisenberg, 1966; Werry & Sprague, 1970). Although AD/HD continued to be considered minimal brain dysfunction, the prognosis seemed more favorable for those children treated with stimulant medications.

In the 1970's, research into this area took a dramatic leap forward, with over 2,000 papers written. Evidence was mounting to shift emphasis away from hyperactivity to problems of impulse control and attention span. Brain mechanisms, such as neurological immaturity (Kinsbourne, 1973), and under- or over-arousal due to neurotransmitter deficiencies (Wender, 1971) were speculated to be present in children diagnosed with this condition.

Virginia Douglas and her colleagues at McGill University (Douglas, 1972), began to question whether hyperactivity was the primary feature of this disorder. They pointed out that there was no clear delineation between normal and abnormal levels of activity, and symptoms of hyperactivity were situational for many of these children. She and other researchers of this period began to argue that deficits in attention and impulse control were the primary areas effected, and downplayed the centrality of hyperactivity in this syndrome. Perhaps as a result of the research conducted by Douglas and colleagues, the name was changed to Attention Deficit Disorder in the 1980 publication of the Diagnostic and Statistical Manual (DSM-III,

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APA, 1980 [see appendix B). Douglas's view (Douglas & Peters, 1979) was that four major deficits could account for symptoms of ADD: (1) deficits in the investment, organization, and maintenance of attention and effort; (2) inability to inhibit impulsive responding; (3) inability to modulate arousal to meet situational demands; and (4) an unusually strong inclination to seek immediate reinforcement (Barkley, 1990). With the publication of the DSM - III, deficits in sustained attention and impulse control were recognized as the hallmark of this disorder.

The reconceptualization of hyperactivity disorder in the DSM-III coincided with the reconceptualization of many childhood disorders, subdividing and recategorizing mental disorders with greater specificity in symptom lists and with guidelines for age of onset and duration of symptoms. In the DSM-III, two subtypes of Attention Deficit Disorder (ADD) were created, based on the presence or absence of hyperactivity (+H or - H). Research (Carlson, 1986) pointed out that the absence or presence of hyperactivity had an important effect on the child's behavior and level of adjustment. The ADD -H child was characterized as more daydreamy, hypoactive, lethargic, and learning disabled in academic achievement, but significantly less aggressive and less rejected by their peers (Carlson, 1986).

During this period there was a proliferation of studies on the use of stimulant medication for the treatment of children with ADD. Major studies conducted at Harvard (Eisenberg,1968), McGill University (Douglas, 1972), University of Illinois (Sprague, Barnes & Werry, 1970), and New Zealand (Werry,1970), demonstated the efficacy of stimulant medication in the treatment of children with ADD. Despite the evidence of its efficacy, there was a widespread view that emerged against its use. One newspaper (Maynard, 1970) reported that 5-10% of the 62,000 grade

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school children in Omaha, Nebraska were being given behavior modifying drugs such as Ritalin, after being identified by teachers as being hyperactive and unmanageable. Although these reports were later shown to be greatly exaggerated, public concern led to a congressional review of the use of psychotropic medications for children. Despite their proven effectiveness, physicians backed away from prescribing stimulants, largely due to societal pressures (Ross & Ross, 1976).

EnvironmentalTheories

During this period there was also an interest in natural foods, and, as an outgrowth, the notion that hyperactivity could be due to environmental causes gained some prominence. Feingold (1973) argued that additives, dyes, preservatives, and salicylates in foods caused some individuals to develop allergic reactions with symptoms of hyperactivity. A National Committee on Hyperkinesis and Food Additives (1980) was convened in order to investigate this theory. After carefully reviewing the research and literature, the Committee concluded that the evidence refuted Feingold's claims. Nevertheless, this theory remains popular, even today.

Other environmental theories followed. One (Block, 1977) suggested that hyperactivity was rooted in technological advancement, that rapid cultural change resulted in a more rapid societal tempo, causing increased excitation and environmental stimulation. In those children living in developed societies who were also predisposed to hyperactivity, he argued, the symptoms became manifest. Later papers refuted this theory, and showed that there was insufficient evidence of a greater incidence of hyperactivity in developed cultures. Ross and Ross (1976,1982), proposed that cultural influences on hyperactivity have more to do

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with whether important institutions of acculturation are consistent, in the demands they make and the standards that are set for child behavior. They said that cultural views will determine and set the threshhold for deviance that will be tolerated in children. In their case examples, Ross and Ross describe a child whose hyperactivity was the result of classroom confusion and teacher harassment. Once taken out of the setting, the child's behavior normalized (Ross & Ross, 1976, p.225).

A second environmental view held that hyperactivity was caused by poor child rearing. Bettelheim (1973) proposed that mothers intolerant of their child's hyperactive or negative temperament react with negativity and that it was these negative responses by mothers that gave rise to pathological levels of hyperactivity in children. While Bettelheim showed that there was a correlation between negative infant-mother interaction and hyperactivity, negative interaction was not causal of hyperactivity (Barkley & Cunningham, 1979). In this study, Barkley and Cunningham show that hyperactivity in children elicits maternal negative interactions; however, mothers' negative interactions are greatly reduced when stimulant medication is used to reduce hyperactivity in their children. Behaviorists (Willis & Lovaas, 1977) also proposed the view that poor conditioning of children led to noncompliant behavior. While this may be true, it was not found to cause hyperactivity.

Late 1980's - present

A central question about ADHD is why there is so much variation in the way children with ADHD manifest symptoms. Neither inattention nor hyperactivity are the hallmark symptoms of the disorder; many children have these symptoms, while others do not. Studies of ADHD children in recent years (Barkley, 1990, p.27) point

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to primary problems in inhibiting behavior, or deficits in ability to control the impulse to respond to a given situation. And so, what has been viewed as a condition that primarily effects three areas of functioning-- attention, regulating activity level, and impulsivity-- can be reduced to one primary deficit: an impairment in behavioral inhibition.

AD/HD and Mental Processes

A theory that explains the inconsistencies and variations in the way children with AD/HD manifest symptoms, proposed by Russell Barkley (1994a), stems from the theories of Jacob Bronowski, the late philosopher, physicist, and mathematician. Bronowski pointed out that only humans have the unique capacity to inhibit and postpone responses to an event. This ability to inhibit response has allowed the evolution of four mental abilities that are critical to the development of self-control and directing behaviors towards the future. These abilities are prolongation, separation of affect, internalization of speech, and reconstitution.

Prolongation. Prolongation refers to the process by which we hold mental images in our minds over a period of time and use those images in order to determine future action. This ability allows humans to hold a thought long after the stimulus for it has disappeared, and to use the images or information to guide future choices or actions. From thinking backward or forward in time, we also develop a general sense of time and how quickly it is passing. Barkley believes that since people with AD/HD have deficits in their ability to inhibit responses, they will demonstate deficits in their ability to use information in a way that effectively guides future behaviors. They will show less of a capacity to use hindsight and forethought,

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will have a poor sense of time and its passing, and will have difficulty returning to a task after an interruption because they have difficulty holding a thought in mind.

Separation of affect. The ability to separate affect gives a person the opportunity to separate the personal meaning of an event, or task, from the information, or content of the event. When able to do this, one can separate the feelings from the facts and respond objectively. People with AD/HD, if they lack ability to separate affect, are likely to respond emotionally to situations. They may be viewed as emotionally immature because of their diminished capacity to modulate feelings or to hold their responses to a given experience. Furthermore, deficits in this mental process effect one's ability to create a state of motivation or maintain it when one is tired or bored. Those with AD/HD may therefore have difficulty with self-motivation on tasks that require sustained mental effort without immediate rewards.

Self directed speech. The third ability that evolves from our ability to inhibit responses is the ability to talk to ourselves. Bronowski points out that language is generally used to communicate with others, however humans also have the capacity to use language to talk to ourselves. This capacity for self directed speech allows us to exchange messages with ourselves so that we can control our own behavior, and invent new rules to follow when we are faced with a problem. Bronowski believed that this uniqely human ability to use language underlies human's problem-solving abilities and sense of free will. Someone with AD/HD, if they have a reduced ability to produce self-directed speech, will be less adept at communicating rules, will be less capable of using rules in guiding their behavior, and will be less able to come up with creative solutions to new situations.

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Reconstitution. The fourth mental ability, reconstitution, refers to the ability to analyse and synthesize information. This ability, which allows us to break information down into smaller parts, also allows us the opportunity to recombine that information into entirely new ideas. This ability endows humans with the capacity to generate numerous ideas, and novel solutions to problems. According to Barkley (1994), this ability is not likely to be well developed in those with a diminished capacity to inhibit responses because it requires that one takes the time to break down and then recombine the information. All of these mental abilities work together in humans; and, in order to develop adequately, they each require the capacity to inhibit responses.

Rather than focus on arousal, inattention, and hyperactivity, Barkley suggests that we shift our thinking away from those deficits, where there is a great deal of variability and inconsistency, and instead examine deficits in the four mental processes discussed by Bronowski. Barkley theorizes that those with AD/HD, a disorder in response inhibition, will demonstrate impairments in their ability to exert self-control, to direct behavior effectively towards the future, or to maximize their future through the choices they make. If so, AD/HD will have its most profound effect on complex self-regulating behaviors that must be organized over time-- on those behaviors that effect one's success in the social, academic, and work arenas.

Neurobiologic and Neurochemical Research on AD/HD

Due to advances that have taken place in neuroimaging technology, there has been an increase in research on the neural substrates of psychopathological conditions. Some of the research points to frontal lobe involvement in AD/HD. Zametkin, et al. (1990), compared PET scans of adults with AD/HD since

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childhood with those of a matched group of normal adults, and found diminished glucose metabolism in the frontal lobes of the AD/HD adults.

In a related study (Semrud-Clikeman, Filepek, Biederman, et al, 1994), researchers at Massachusetts General Hospital and the University of Washington used MRI scans to compare the brain structures of 15 males diagnosed with AD/HD to 15 males without AD/HD. The study found that the males with AD/HD had smaller anterior and posterior corpus callosal structures than the comparison group. Since the corpus callosum assists with the transfer of information between cerebral hemispheres and is involved in the systems subserving sustained attention, the researchers suspect that these findings may be related to the poor sustained attention of children with AD/HD.

Considerable research has taken place in an attempt to clarify the role of neurotransmitters in AD/HD while also exploring the role of medications in ameliorating the symptoms of AD/HD (Zametkin and Rapaport, 1987; Hechtman, 1991). Based on studies conducted on monkeys (Roeltgen & Schneider,1991; Schneider & Kovelowski, 1990), researchers have theorized that the neurotransmitters dopamine and norepinephrine may be abnormally metabolized by children with AD/HD. When administered stimulants, the dopamine and norepinephrine systems are effected and the symptoms of AD/HD diminish.

Gender and AD/HD

Overview

AD/HD is considered to be 2-9 times more prevalent in boys than in girls (Bird, et al,1988; Anderson, et al, 1987; Safer & Krager, 1988). Clinic referred samples

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are not representative of the disordered population in general (Cohen et al., 1994;Epstein et al., 1991; Costello, 1990) ; epidemiological studies have shown that male to female ratios of AD/HD is 3:1 within community samples, whereas in clinic referred samples it has ranged between 6:1 and as much as 9:1. Girls with the disorder are frequently diagnosed at ages 1-3 years older than the period when boys are typical diagnosed, suggesting they may be suffering silently (Brown, et al., 1991). In a study (deHaas,1986) of fourth, fifth, and sixth grade students in four midwestern county elementary schools, hyperactive girls made up 7% of the population and hyperactive boys constituted 5% of the population.

Less is known about the syndrome in girls because most studies of AD/HD focus on boys. In comparison, the literature focused on females is sparse (deHaas & Young, 1984). Most studies of AD/HD have either excluded girls, or have included a few girls as part of a larger group of boys (Faraone, et al, 1991). Despite this, generalizations about AD/HD in girls are made based on the evidence gathered on boys, and treatment strategies are made based on studies conducted on boys. Faraone, et al (1991), clearly state that less is known about girls with this syndrome, probably because researchers try to obtain homogeneous samples. Thus, a vicious cycle continues when researchers continue to sample a group that may be easier to study because more is known about them, and perpetuate the belief that the disorder is important primarily in males.The combination of underdiagnosis and undertreatment of girls has substantial mental health and educational implications for this population.

In a unique lecture series sponsored by the National Institute of Health, Alan Zametkin, M.D.(1995), addressed questions about ADHD in females. He said boys

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and girls have the same symptoms. While this is in fact true -- that is, the symptom list for boys and girls is the same -- there are differences in the severity of symptoms, in the course of the disorder, and in co-morbidity, between the two genders. Overall ratings of psychopathology, personality, emotional functioning, and response to stimulants are similar between boys and girls with attention disorder (Pelham, Walker, Sturges, et al, 1989; Befera & Barkley, 1985). However, girls have higher rates of cognitive impairment, depression, and low self-esteem and lower rates of severe behavioral disturbances than boys with the disorder (Berry, Shaywitz, Shaywitz, 1985; Ackerman, Dykman, Oglesby,1983). Boys and girls with AD/HD do not differ significantly in socio-economic status, but differ in co-morbid psychiatric disorders, with girls having higher rates of co-morbid major depression and phobias, and lower rates of conduct disorder than boys (Faraone et al, 1991). Both genders share a common biological substrate for the disorder; first-degree relatives of clinically referred girls with attention deficit disorder have a significantly higher risk for attention deficit disorder than the relatives of normal girls (Faraone et al, op. cit.).

Lower prevalence of maternal depression and marital discord (Breen & Barkley, 1988) have been found in the families of girls with attention disorder than in the families of boys with the disorder. Because family disruption and severe behavioral disturbances are observed less frequently among girls than among boys with AD/HD, girls may be less likely to come to the attention of health care providers.

There is also evidence of gender differences in brain metabolism in the AD/HD adolescent population. In an attempt to replicate their landmark study in which they

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compared PET scans of AD/HD adults with normal adults (Zametkin, 1990), Zametkin and collegues in the NIMH (1994) compared PET scans of 19 normal (13 male, 6 female) and 20 AD/HD (15 male, 5 female) adolescents. They found no statistical differences between AD/HD and normals. However, after further analysis by gender, the researchers found that girls with AD/HD had 15% less metabolic activity than normal girls (Barkley, 1994b).

Gender Differences Among ADHD Children in the 3-6 Year Old Period

Early studies of overactive 3-6 year old girls compared to overactive 3-6 year old boys, drawn from the Fels longitudinal study (Battle and Lacey, 1972), demonstrate that hyperactive girls channel their hyperactivity into acceptable, achievement striving behavior in intellectual, physical, and social arenas, while boys resist adults and avoid achievement-motivating intellectual activities. Girls' and boys' social behaviors are almost identical in the preschool years; they both attack rather than withdraw from social situations, they attempt to dominate their peers, and initiate physical aggression towards same sex peers. Socially, however, the girls' social attack is positively received by peers, whereas boys' is not. The girls in the Fels sample chose achievement tasks characteristic of children older than they, and were persistent with intellectual tasks.

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Implications for Referral

Since common features of children with AD/HD include failures in academic achievement and failures in the completion of tasks (symptoms that are typical of male but not female preschoolers), early detection of the disorder in females is compromised if professionals are unaware of the significant differences in the ways each gender manifests symptoms. The DSM-IV (APA, 1994) clearly states that impairment must be evident before age 7. Thus, females are at risk for misdiagnosis since their early childhood symptoms are viewed positively. Moreover, descriptions of AD/HD associate poor peer interactions with the disorder (also a feature commonly found in preschool males and less so in females), further increasing the likelihood that females will be underdiagnosed if professionals are unaware of these differences.

DuPaul and Stoner (1994), in their book on ADHD in the schools, comment on the few studies conducted on females with ADHD, and reiterate the small percentage of ADHD girls with concomitant defiant and aggressive behavior. They mention that observational stategies used in school evaluations are less discriminatory of ADHD in females and that different off-task behaviors need to be emphasized when evaluating girls suspected of having AD/HD. They do not specify which behaviors ought to be considered.

The assessment tools used to evaluate AD/HD by classroom observation do not state that the tools are more sensitive to AD/HD in males. Practitioners in school settings may, therefore, be unaware of the instrument's decreased reliability for females, thus increasing the rate of false negative results in the female AD/HD population.

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Gender differences among ADHD children in the 6-10 year old period

Self image and Activity Level

From the 3-6 year old period through adolescence, overactive girls had a high estimate of their intelligence, as did their parents (Battle & Lacey, 1972). Overactive boys had a much lower view of their intelligence and had more negative reactions from their mothers than did the girls. The 6-10 year old girls continued to approach and to participate in social situations, although they had lower standards and value for achievement than non-hyperactive peers. In the 6-10 year old period, girls became uncompliant with adults and attempted to dominate them. However, when these same girls reached adulthood, they were significantly less attacking towards their parents. A crucial difference between the genders in this 6-10 year old age group (Battle & Lacey, op. cit.) is that ADHD girls were significantly less hyperactive than their male counterparts.

Implications for Referral

Since the greatest number of children are referred for AD/HD evaluations during this period, girls are less likely to be diagnosed if too much weight is given to hyperactive symptoms. Much more concem is given to the hyperactive rather than the hypoactive child, however the latter pattern may represent a potentially more serious pattem. Children with AD/HD, inattentive type, who sometimes appear as sluggish, slow, or daydreamy, are viewed with considerably more approval than their hyperactive counterparts (Ross & Ross,1976). Many children with inadequate academic achievement are promoted each year because their behavior exerts a halo effect on assessments of their academic progress.

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Hyperactive Girls : Impulsivity and Sustained Attention

deHaas and Young (1984), studied a population of hyperactive and normal first and second grade girls from a midwestern county school corporation. Hyperactive girls constituted 6% of the girls sampled. Given most prevalence estimates, the percentage of girls was much higher than expected. They found that on tests that reflect difficulties in sustaining attention, the hyperactive girls made significantly more errors than normal girls. This is consistent with Douglas' (1980) findings that deficits in sustaining attention, or concentration deficit, is a major deficit for hyperactive children.

The hyperactive girls did not differ significantly from normals in tests measuring response latency, which suggests that hyperactive girls do not show the impulsive response style that is characteristic of hyperactive boys (Douglas,1980). By contrast, Prinz and Loney (1974) found that teacher- identified hyperactive girls did have difficulties in impulse control.

deHaas and Young conclude that hyperactive girls do not show an impulsive style, while Prinz and Loney conclude that they do. The difference in conclusions appears to result from the markedly different ways these researchers measured impulsivity. deHaas and Young used the Matching Familiar Figures Task (MFFT), which is a cognitive task, to assess impulse control; Prinz and Loney(1974) used a 5-point rating scale describing social behaviors, such as "defiance", and "smarting-off", as the defining features of impulsivity and lumped together behaviors that exist on a continuum of severity such as physical outbursts of rage, delinquent acts, and defiance.

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Gender Differences in Aggression,Conduct Problems and Peer Rejection

Generalizations about children with AD/HD are sometimes contradicted in the literature on females with AD/HD. An example of this, noted by DuPaul and Stoner, (1994, p.36), is the statement that children with AD/HD exhibit more aggressive and negative behavior. While both boys and girls do evidence greater negative and aggressive behaviors, the quality and degree of those behaviors differs. If the gender differences are not specified, then professionals working with these children may presume that aggressive behaviors are physical, when they may be verbal; they may be directed towards others or they may be directed towards the self. Negative behavior can also mean oppositional or defiant, or can be negative feelings towards the self.

Hyperactive girls score significantly higher than normal girls on conduct problem scales (deHaas, 1986), although they also score significantly lower than hyperactive males (Sprague, Cohen & Werry, 1974; King & Young, 1981; deHaas, 1986). Schools are more likely to request parental help in the management of boys than girls, and boys are more likely to engage in fighting than girls (Berry, Shaywitz, Shaywitz, 1985). Although studies show both groups were unruly and argumentative, girls were no more likely to fight than the female controls in their sample.This indicates that hyperactive girls present fewer conduct problems to their teachers than do hyperactive males. Hyperactive girls, since they do not present the same management problems in the classroom (Sandoval, Lambert, and Sassone,1980), may not have their problems addressed. Because boys receive higher ratings on conduct problem scales than girls, they may be brought to the attention of teachers and mental health professionals in greater numbers.

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Male and females ADD +H were significantly more likely to be rejected by peers. The boys with ADD +H (but not the girls), were significantly more likely than controls to physically hurt or be hurt by other children. Both groups seemed to be indifferent to friends, however girls with ADD +H experienced more peer rejection than their male counterparts. Girls with ADD -H were rated as more submissive than boys with ADD -H and more submissive than male and female controls. Virtually all of the girls unable to play well in group games were confused by the rules, whereas overstimulation and loss of control were the most common stumbling blocks for group functioning for the boys.

Gender Differences in Referral : To Be, or Not To Be, Hyperactive

Ellis and Shekim (1979) compared 28 hyperactive girls with 28 hyperactive boys. The two groups were similar in the main symptoms of hyperactivity, but differed on other variables. The hyperactive girls were more often referred for learning disabilities than for behavior disorders. Berry,Shaywitz,and Shaywitz (1985), studying samples of boys and girls, found that girls diagnosed with ADD with hyperactivity (ADD+H) were significantly younger at referral than boys diagnosed with ADD with hyperactivity. Girls with ADD without hyperactivity (ADD-H) were significantly older than the boys without hyperactivity. Girls with hyperactivity had greater impairment of academic and language skills, whereas ADD+H boys were more impulsive than their female counterparts. Girls received lower full scale and verbal IQ ratings than boys, and were more likely to be referred for speech problems than boys. The findings from Berry et al's study has important ramifications for the female population with this disorder, because females who are referred for treatment of learning disabilities rather than referred for mental health

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services are less likely to receive the treatment that will alleviate the symptoms of AD/HD.

Gender Differences in Medication Treatment

Medication effects are similar for AD/HD girls and boys (Pelham, et al, 1989). Behavior modification and methylphenidate treatment both, independently, improve classroom behavior, but only methylphenidate improves academic productivity and accuracy. Despite this, girls are less likely to be treated with stimulant medication.

In a prospective 10 year longitudinal study by Weiss et al, of 75 hyperactive children who had not received methylphenidate treatment compared with a matched, non hyperactive group, the data revealed that the hyperactives completed significantly less schooling, failed significantly more subjects and were expelled significantly more often than the non hyperactive group. Hyperactives had more court referrals (although they did not result in more court appearances than the non-hyperactive subjects). The hyperactive group also tended to have more personality traits of a characterological nature (although for the most part they did not receive a formal clinical diagnosis). The characterological traits were commonly " impulsive" or "immature-dependent." (Rapoport & Zametkin, 1980).

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Conclusions

From my review of the literature on this disorder, attendance at AD/HD symposia, and discussion with professionals in the field I have formulated the following conclusions about AD/HD and gender:

1. There are misconceptions about AD/HD in girls. The research literature has too broadly generalized about AD/HD in females, thereby overlooking important differences that exist in the way males and females present symptoms, both at home and in school.

2. These misconceptions influence who is referred for AD/HD assessments, with males being referred in larger numbers than females.

3. Practitioners are likely to identify aggressive children with AD/HD and, since females with AD/HD demonstrate less aggressive behaviors than males, they are less likely to be identified.

4. Because of gender-linked misconceptions in the research literature, leading to gender-linked biases in referrals for assessment and identification, it can be said that practitioners in the field exhibit gender bias about AD/HD.

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METHODS

In order to make these ideas explicit,and document them, I have designed a questionnaire that was distributed to pediatricians, child psychiatrists, and psychologists.

Sample

The sample was comprised of 21 pediatricians, 28 child psychiatrists, and 24 child psychologists. In order to insure a minimal level of expertise only those practitioners with two years or more of post-training experience in their field of practice (post residence or post doctoral), and licensure from their state (if the state has a licensing requirement), were selected for study. Professionals practicing outside of the USA were excluded as they may use different diagnostic criteria.

Pediatricians, child psychiatrists and child psychologists were sampled, as they are the practitioners to whom families typically are referred for evaluations of AD/HD. While practitioners of other disciplines may be competent to diagnose children for mental disorders, for this study I have chosen to sample those practitioners who have the greatest likelihood to be called upon to evaluate childhood disorders. (This is by no means a criticism of other qualified professionals, it is only meant to narrow the sample to a manageable size and to limit the number of potentially confounding variables).

Pediatricians, because of their expertise in the diagnosis and treatment of children, are often the professionals to whom schools and parents first turn to for consultation when a child needs to be screened for AD/HD. Child psychiatrists are also directly referred children needing evaluations for AD/HD and/or co-morbid

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problems. Since both of these practitioners are in the position to prescribe medication, by sampling these two groups I determine what their views are regarding psychostimulant treatment, and explore whether treatment recommendations are made based on diagnosis, gender, or spectrum of symptoms.

Psychologists with an expertise in the diagnosis and treatment of children were also sampled. The rationale for this is that psychologists have an expertise in using assessment measures, and are frequently called upon to test children for learning disabilities, a condition which is often co-morbid with AD/HD, and frequently confused with AD/HD. Additionally, qualified psychologists have been approved by legislative action to evaluate for AD/HD (Resnick & McEvoy, p.vii).

Measure

The tool used to gather data is made up of 116 questions divided into six sections and a section for open-ended comments. Section A (questions 1-6) covers demographic information, including the practitioner's professional field, years of experience, and professional settings in which they work. Section B (questions 7-16) assesses practitioners' conscious opinions about the primary symptoms that boys and girls with AD/HD are likely to present with. Practitioners are asked a question about what percentage of patients they have diagnosed with AD/HD have been male, and a question about what percentage have been overtly aggressive.

Section C (questions 17-23) is directed to physicians, since only they are able to prescribe medication. In this section I have asked questions about the physician's preparedness to prescribe psychostimulants (only those physicians with DEA approval to prescribe stimulant medication can prescribe drugs that research

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indicates are the most effective pharmacological treatment for this disorder). Included in this section are four questions that address gender related issues. Findings from two of these questions will be reported in this study. Two of these questions address the effectiveness of psychostimulant treatment for males and females, and two additional questions attempt to assess bias that may be more subtle, by asking about the effectiveness of psychostimulant treatment for children who do not demonstrate symptoms of overt aggression.

Section D (questions 24-56) examines how familiar practitioners are with the symptoms of AD/HD by giving 13 AD/HD descriptors from the DSM - IV and by posing 20 questions about common beliefs and myths about this condition. Items are rated on a true/false scale. Findings from these items assess the level of current knowledge of the AD/HD literature in this sample. Twenty of the items will be reported in the results.

Sections E and F (questions 57-116) examine practitioners' knowledge and misconceptions about this disorder while also attempting to elicit information about gender bias. In section E, practitioners rate thirty characteristics that may be seen in children with AD/HD. In section F they rate the same characteristics in girls. Practitioners are asked to rate on a three-point scale how often each trait is seen in children/girls with AD/HD.

Finally, there is an open ended section in which practitioners are given the opportunity to make any comments they would like to make.

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Procedure

Subjects were recruited by placing notices in the Compuserve computer network, subheading "Attention Deficit Disorder Forum", sub-sub- heading, "Ask the Docs." and also by placing notices in the Kaiser Permanente, Northern California E-mail bulletin boards that have been established for providers in psychiatry and pediatric departments in the Kaiser Northern California region. I also gave the survey to the members of the Regional Office of Child and Adolescent Psychiatrists (ROCAP), who held their annual meeting in Monterey, California on January 26-28, 1996. I sat at a table at the rear of the conference room with the survey tool, and asked the attendees if they would be willing to participate in the survey. No one was obligated to fill out a questionnaire. Surveys were also sent to each child psychiatry department and pediatrics department in the Kaiser Northern California region and practitioners were asked if they would be willing to participate in the survey. No one was obligated to fill out a questionnaire.

Once a participant was recruited, I gave give him/her a cover letter and the survey tool (Appendix A), and the option to fill out the questionnaire then, or, two stamped, self-addressed envelopes; one for the survey tool, and one for their name and address if they want feedback. Kaiser participants returned their questionnaires through inter-office mail with complete anonymity.

Data Analysis

Descriptive statistics (means and frequency distributions), were generated to describe the sample and to document physicians' understanding of AD/HD and its manifestations in boys and girls. Matched pair t-tests were used to compare

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ratings of traits seen in “children with AD/HD,” with ratings of the same traits in “girls with AD/HD.”

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RESULTS

Since the data gathered are rich in information beyond the scope of this dissertation, the following sections will address only results that pertain to the specific hypotheses of this thesis.

Sample

Of the 289 questionnaires that were sent, 73 completed questionnaires were returned. Twenty-four child psychologists, twenty-one pediatricians, and twenty- eight child psychiatrists participated. Sixty-four point four percent of the sample had more than 10 years of experience in their respective field (Table 1) and came from a range of practice settings.

Table 1

Years of experience

yearsrs of experience	*N*	percent of total
2-5	8	11
6-10	17	23.3
11-15	14	19.2
16 or more	33	45.2
total	72	98.7

Note: 1 respondent failed to complete this section.

N= 73

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Fifty-seven practitioners listed Kaiser Permanente as their primary or secondary practice setting; the others came from a range of practice settings (Table 2).

Table 2

Primary and secondary employment settings

Setting	Count
Kaiser	57
Private solo practice	15
Private group practice	6
Medical Center	3
Non-Kaiser HMO	0
other	9

Forty-seven of the forty-nine M.D.'s report that they have triplicate forms and are therefore able to write prescriptions for psychostimulant medications.

Respondents' Knowledge, Biases, and Beliefs about AD/HD

Participants were asked about diagnosis, causes, course and treatment of AD/HD. Questions assessed their adherance to common myths, or current information. Response trends are reported here to illustrate practitioners' knowledge of up-to-date ideas and practices. Eighty-two percent of participants said they were familiar with the most recent descriptions of AD/HD given in the DSM-IV (Table 3). Ninety percent of respondents evaluate patients with AD/HD.

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Table 3

ADHD knowledge source

Source	number of responses	percentage
DSM - III	18	24.7
DSM III-R	32	43.8
DSM - IV	60	82.2
ICD-90	3	4.1
none	3	4.1
other	4	5.5

Thirteen descriptors of AD/HD were taken from the DSM-IV. Participants were asked to check which of these were AD/HD symptoms. Eighty percent of their answers were correct. Participants seemed to be most uncertain about whether there is a higher prevalence of psychological disorders in family members of individuals with AD/HD (correct response of 52.1 percent), and whether AD/HD is diagnosed if the symptoms occur during the course of a pervasive developmental disorder (39.7 percent correct).

Most believe the diagnosis of AD/HD should include information from parents (80.8 percent) and teachers (97.3 percent). Seventy-seven percent believe children diagnosed with AD/HD should be evaluated for learning disabilities. Participants clearly understand AD/HD is not outgrown by adolescence (97.3 percent).

Practitioners do not think AD/HD is caused by ineffective teachers (95.9 percent), or by poor parenting (95.9 percent). Only 6.8 percent of practitioners

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believe AD/HD can be treated with dietary changes. Eighteen percent of the practitioners believe a child doing well in school is unlikely to have AD/HD.

Ninety-six percent of practitioners believe psychostimulant treatment is an effective treatment for AD/HD. They believe it is equally effective for males and females, whether there are aggressive symptoms present or not (see Tables 4,5,6,7).

Table 4

Do you think psychostimulant medications are an effective treatment for AD/HD?

Response	Frequency	Percent
Yes	50	68.5
sometimes	20	27.4
no	0	
not sure	2	2.7
missing cases	1	1.4
TOTAL	73	100.0

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Table 5

Practitioners' responses to the item: " When I diagnose a boy with AD/HD, I..."

	frequency	percent
usually recommend psychostimulant medications	50	68.5
hold off on psychostimulant medications	21	28.8
missing	2	2.7
Total	73	100.0

Table 6

Practitioners' responses to the item: " when I diagnose a girl with AD/HD, I..."

	frequency	percent
usually recommend psychostimulant medications	50	68.5
hold off on psychostimulant medications	20	27.4
missing	3	4.1
Total	73	100.0

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Table 7

Practitioners' treatment plan for a child diagnosed with AD/HD, who does not demonstrate overtly aggressive behaviors

	frequency	percent
decision to treat with psychostimulants is not at all effected by absence of overt aggressive symptoms	52	71.2
hold off on recommending medications	3	4.1
focus on parenting	4	5.5
other	10	13.7
hold off on meds and focus more on parenting skills	2	2.7
not at all/ hold off/ focus more on parenting	1	1.4
missing	1	1.4
Total	73	100.0

While the vast majority of practitioners believe psychostimulant treatment is an effective treatment for AD/HD, 9.6 percent thought psychostimulants should be used as a last resort measure, and 8.2 percent thought psychostimulants should be discouraged unless psychiatric illness is present . Thirty-four percent of practitioners do not believe psychostimulant medication is the most effective treatment for AD/HD, and 35.6 percent of the sample had the mistaken belief that a positive

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response to psychostimulant medication means that AD/HD is the likely diagnosis. They estimate that, of patients they have diagnosed with AD/HD, 80.3 percent are male (standard deviation=11.02). Of AD/HD patients they have diagnosed, 41.5 percent are overtly aggressive (standard deviation=21.8). Twelve percent of practitioners believe AD/HD rarely occurs in females, and 5.5 percent say they do not know whether it rarely occurs in females.

Gender Differences

In order to see how, and to what extent, AD/HD is seen differently in boys and girls, practitioners were given a list of 24 traits that might be seen in boys with AD/HD and were asked to rank the top ten traits they associate with a typical AD/HD boy. Then they were given the same list and asked to rank the ten traits they most associate with a typical AD/HD girl. Table 8 compares the ranked responses.

Table 8

Comparison of rankings of the ten most typical symptoms of boys and of girls with AD/HD

BOYS				GIRLS			
characteristic	# responses	percent	ranking	characteristic	# responses	percent	ranking
easily distracted	67	91.8	1	innattentive	66	90.4	1
inattentive	65	89	2	easily distracted	58	79.5	2
impulsive	64	87.7	3	disorganized	54	74.0	3
fidgetty	54	74.0	4.5	doesn't listen	50	68.5	4
disorganized	54	74.0	4.5	restless	40	54.8	5

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Table 8- continued

Comparison of rankings of the ten most typical symptoms of boys and of girls with AD/HD

BOYS				GIRLS			
characteristic	# responses	percent	ranking	characteristic	# responses	percent	ranking
restless	52	71.2	6	fidgetty	39	53.4	6
doesn't listen	51	69.9	7	daydreamy	38	52.1	7.5
on the go	39	53.4	8	impulsive	38	52.1	7.5
difficulty playing quietly	37	50.7	9	avoids difficult tasks	33	45.2	9
rejected by peers	32	43.8	10	rejected by peers	27	37.0	11
immature	24	32.9	11	academically delayed	27	37.0	11
avoids difficult tasks	22	30.1	12.5	talks excessively	27	37.0	11
defiant/op-positional	22	30.1	12.5	on the go	19	26.0	13.5
physically aggressive	21	28.8	14	difficulty playing quietly	19	26.0	13.5
academ-ically delayed	17	23.3	15	immature	14	19.2	15

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Table 8- continued

Comparison of rankings of the ten most typical symptoms of boys and of girls with AD/HD

BOYS				GIRLS			
characteristic	# responses	percent	ranking	characteristic	# responses	percent	ranking
talks excessively	15	20.5	16	learning disabled	13	17.8	16
learning disabled	14	19.2	17.5	defiant/op-positional	10	13.7	17
daydreamy	14	19.2	17.5	depressed	8	11.0	18
verbally aggressive	12	16.4	19	over-anxious	7	9.6	19
depressed	2	2.7	20.5	verbally aggressive	6	8.2	20
destructive to self	2	2.7	20.5	submissive	3	4.1	21
over-anxious	2	2.7	23.5	destructive to self	3	4.1	22.5
destructive to others	2	2.7	23.5	physically aggressive	3	4.1	22.5
				destructive to others	1	1.4	24

Practitioners list distractibility and inattention as primary for both genders, with distractibility slightly higher for males and inattention slightly higher for females.

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Males are seen as having greater problems with over-activity, as evidenced by the greater frequency of impulsivity, fidgettiness, restlessness, and "on the go", for males than females.

Girls are seen as more inattentive and disorganized than boys, more daydreamy, and as experiencing more academic problems than boys. However, neither gender has learning disabilities among the top ten traits listed. Boys are considered more oppositional/defiant, and physically aggressive than girls. While neither anxiety nor depression are seen as traits typical of males or females, they are expected less often in males. Practitioners do not regard either gender as self destructive or submissive.

Gender Bias

Results show significant differences between practitioners' expectation of AD/HD in girls as compared with boys. These gender differences do not, in themselves, constitute gender bias. In fact, they may well document real differences between girls and boys with AD/HD. If, however, the description of "children with AD/HD" is more similar to the symptom picture of boys than girls, then this will provide evidence that males are taken as normative for all children, and that girls are left out, as has been found in studies of practitioners' descriptions of the mentally healthy man woman, and adult (Broverman, et al, 1970).

To test this hypothesis, practitioners were asked to respond to a list of thirty characteristics one might see in children with AD/HD and mark off on a 3-point scale whether they think each characteristic is seen very often, sometimes, or rarely, in children. Then they were given the same 30 characteristics again, and

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asked to what extent they think each characteristic is found in girls. Paired t-tests were conducted to compare descriptions of children with descriptions of girls.

Table 9 describes the results of these comparisons. Eighteen of the thirty items were rated significantly differently when considered characteristics of children than when considered characteristics of girls. Children were rated as very often having difficulty sustaining attention, doing sloppy work, having difficulty organizing tasks, fidgetty, and having difficulty awaiting their turn; girls were rated significantly lower. Children were rated as often having temper tantrums, moving at a fast tempo, acting as if driven by a motor, having difficulty playing quietly, often leaving their seats, running or climbing excessively, interrupting or intruding on others, and blurting out answers before questions are completed. Girls were rated as having significantly less of a problem in all of those areas. They were seen to daydream significantly more than children with AD/HD. Children with AD/HD were rated as sometimes overtly physically aggressive; this characteristic was rated significantly less in girls. Although children with AD/HD were seen as rarely sluggish or well-behaved, girls are rated as significantly more likely to be characterized in this way.

Table 9

Comparison of Characteristics of "Children with AD/HD" and "Girls with AD/HD"

Characteristic	Mean for Children	Mean for Girls	t	p
sluggish	2.65	2.30	5.12	.001
temper tantrums	1.60	2.09	-3.17	.002

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Table 9-continued

Comparison of Characteristics of "Children with AD/HD" and "Girls with AD/HD"

Characteristic	Mean for Children	Mean for Girls	t	p
difficulty sustaining attention	1.01	1.20	-3.96	.001
makes careless mistakes	1.18	1.25	-1.22	.228
does not seem to listen when spoken to	1.20	1.29	-1.76	.083
learning disabled	1.91	1.93	-.44	.658
well behaved	2.29	2.09	3.83	.001
often does sloppy work	1.25	1.52	-4.07	.001
has difficulty organizing tasks	1.03	1.14	-2.98	.004
fidgets or squirms	1.20	1.54	-6.00	.001

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Table 9-continued

Comparison of Characteristics of "Children with AD/HD" and "Girls with AD/HD"

Characteristic	Mean for Children	Mean for Girls	t	p
moves at a fast tempo	1.46	1.81	-5.28	.001
gets high grades	2.38	2.32	1.42	.159
overtly physically aggressive	1.97	2.33	-5.54	.001
has difficulty following rules	1.27	1.46	-1.23	.224
daydreams	1.69	1.57	2.04	.045
often loses things	1.34	1.41	-1.52	.133
socially withdrawn	2.19	2.11	.93	.357
acts as if driven by a motor	1.40	1.80	-6.10	.001
difficulty playing quietly	1.48	1.88	-6.44	.001
rejected by peers	1.63	1.79	-3.25	.002

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Table 9-continued

Comparison of Characteristics of "Children with AD/HD" and "Girls with AD/HD"

Characteristic	Mean for Children	Mean for Girls	t	p
often fails to give close attention to details	1.20	1.26	-1.00	.321
often talks excessively	1.61	1.57	.55	.581
easily distracted	1.07	1.11	-1.35	.182
often forgetful	1.37	1.31	1.16	.251
often has difficulty awaiting turn	1.21	1.65	-6.64	.001
often leaves seat	1.34	1.78	-6.35	.001
runs or climbs excessively	1.52	2.00	-6.69	.001
interrupts or intrudes on others	1.25	1.72	-6.47	.001

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Table 9-continued

Comparison of Characteristics of "Children with AD/HD" and "Girls with AD/HD"

Characteristic	Mean for Children	Mean for Girls	t	p
blurts out answers before questions are completed	1.43	1.71	-4.03	.001
avoids tasks that require sustained mental effort	1.38	1.38	.00	1.00

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DISCUSSION

Gender Bias

Gender Bias in Referrals

A first sign of gender bias regarding AD/HD may be the four-to-one ratio of male:female patients diagnosed.

AD/HD in females is diagnosed at higher rates in adult samples than in child samples (Barkley et al, 1994b). Since the DSM-IV clearly states the disorder must be present before age seven(Appendix B), when AD/HD is diagnosed in adults, practitioners, using retrospective measures, are finding the symptoms of AD/HD present before age seven in females as well as males. One must therefore ask, what are the factors that increase the likelihood of diagnosing male children with AD/HD?

Gender Bias in Perception of Symptoms

Results of this study suggest that practitioners are looking for girls who are inattentive, easily distracted, disorganized, who do not listen, and are restless, daydreamy, and fidgetty. By looking for this symptom constellation, they may only be diagnosing a small percentage of girls, perhaps the more extreme cases of AD/HD, while missing others.

Inattention, distractibility, and hyperactivity. Although practitioners think of AD/HD as primarily characterized by inattention and distractibility for both genders, the literature (Battle & Lacey, 1972) demonstrates that, in 3-6 year old females, inattention and distractibility are not symptoms that necessarily manifest. If

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females with AD/HD are able to channel their hyperactivity into achievement striving behavior in intellectual, physical, and social arenas then practitioners may fail to diagnose hyperactive girls in this early age bracket. Girls will not necessarily avoid difficult tasks, nor will they necessarily be rejected by their peers. In this early phase of their development, females with AD/HD demonstrate achievement striving behavior.

Battle & Lacey's (1972) conclusions about AD/HD gender differences were drawn from the Fels longitudinal study, which was conducted during a time when hyperactivity was defined as the hallmark feature of AD/HD. At present, it is no longer seen as a predominent feature of the disorder (Barkley, 1990). Today, greater emphasis is being placed on response inhibition as the hallmark feature of AD/HD. Hyperactivity may still be viewed as a problem of response inhibition, however practitioners must keep in mind that activity level, or arousal, may manifest differently for each gender. Furthermore, the disorder may manifest differently depending on the individual's developmental phase. This failure to understand the different symptom manifestations of AD/HD in children of different ages is what kept practitioners from realizing that AD/HD was not outgrown by puberty (Denkla, 1991). Because of the dramatic differences in the way symptoms manifest at various developmental phases, it wasn't until the 1980's that clinicians realized that the disorder continues beyond puberty, and throughout the lifespan.

Gender and externalizing symptoms. Practitioners believe that 41 percent of the AD/HD patients they see show aggressive behaviors. Externalizing symptoms were rated more highly for boys than girls (impulsive, fidgetty, restless, on the go, difficulty playing quietly, defiant/oppositional, physically aggressive, verbally

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aggressive, destructive to others). What remains unclear is whether males and females with AD/HD manifest symptoms differently, or whether the symptoms are interpreted differently for males than for females.

Practitioners in this sample characterize AD/HD girls as less impulsive than their male counterparts. They rank impulsivity seventh for girls, but third for the AD/HD boys. Risk taking behaviors seen in boys usually take externalizing forms and are considered impulsive. Girls may show other types of risk taking, or impulsive behaviors.

Research on risk taking behavior being conducted at the University of California in San Francisco (Lynn Ponton, personal communication), found that girls' risk taking behavior is somewhat different from the behaviors seen in males (Ponton,1997). Females' risk taking manifests in the form of eating disorders, and teenage pregnancies. Although these behaviors are quite risky and impulsive, our culture may not be defining them as such. If the definitions for impulsivity that are typical for males (usually seen in terms of motoric behaviors and overt aggression) are being extended to females, we may be failing to identify the ways in which females are uniquely impulsive.

Co-morbid depression and anxiety. Females with AD/HD have higher rates of co-morbid depression and anxiety disorders (Faraone et al, 1991) than their male counterparts. The practitioners surveyed see these traits as only slightly more frequently found in females than males, and rank them very low for both genders. If practitioners do not define these as symptoms typically seen in girls with AD/HD this may account for part of the reason why AD/HD females are underdiagnosed and undertreated (Biederman, et al, 1993).

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Boys will be boys. Male socialization creates an acceptance of boys' aggressive behavior. In my practice I often hear parents describe their son's aggressiveness as " boys will be boys." They appear to believe that aggression in boys is normal and caused by hormonal differences between the genders. The same behavior in girls is not readily tolerated. Recent studies on female socialization (Flaherty,1997) are finding that females are more restricted in their behavior. Parents keep their daughters closer to them physically than they do their sons, and are less tolerant of aggression in girls. This difference in how each gender is socialized may be creating differences in how disorders such as AD/HD, and perhaps others, manifest.

Traits descriptive of motor manifestations of AD/HD are heavily emphasized. However, if females are more restricted than males, they may exhibit fewer of the motor traits associated with AD/HD. If so, then researchers and practitioners must take a fresh look at the specific ways that symptoms are manifest in girls (such as substance abuse and teen pregnancies) and interpret behavioral traits with an eye to gender differences that may be mitigated by differences in socialization. By so doing we may be better equipped to accurately evaluate children.

Sample

The practitioner sample from the San Francisco Bay area has kept up with developments in the field. Over 80 percent of the practitioners report that they are knowledgeable of the DSM-IV description of AD/HD. This level of current knowledge is confirmed by their overall high degree of knowledgeable responses to information sections of the survey.

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One cannot assume that this sample is reflective of the general community of practitioners of child psychiatry, child psychology, and pediatrics, however. There may be characteristics unique to practitioners from this region, perhaps including variations in one's understanding of gender differences in children with AD/HD.

Generalizations about all practitioners cannot be made based on the results from this sample. However, gender bias was demonstrated in this study, where a sample of very knowledgeable and experienced practitioners rated "children" and "girls" significantly differently on 17 of 30 AD/HD characteristics. It is likely, therefore, that gender bias exists in the thinking of the general population of child psychiatrists, child psychologists, and pediatricians

Since the research on AD/HD has relied heavily on studies conducted on males, much more research needs to be conducted on females. While reviewing the literature, it became evident that most of the studies that have been conducted have relied on samples that are predominantly males, and predominantly caucasian males.

In order to develop an unbiased understanding of this disorder, future studies need to focus on specific populations that are reflective of gender, ethnic and racial differences in our society. Researchers need to examine their operational definitions of concepts, such as response inhibition, in order to insure that the definitions are not sexist or biased in some way. For example, if impulsivity is defined in terms of externalizing behaviors, (such as jumping from high places), girls are less likely to be seen as impulsive. More thought needs to be given to the gendered way that we define or operationalize concepts, and how that may influence who gets diagnosed.

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If girls are underdiagnosed, or misdiagnosed, and are therefore not receiving treatment that includes stimulant medications, then these girls go on to complete less schooling, fail significantly more subjects, and are expelled at higher rates than their non-AD/HD female peers (Weiss & Hechtman,1993).

While these findings have particular relevance to practitioners involved in the diagnostic assessment of children, these findings also are relevant to teachers, guidance counselors, school psychologists, and clinicians who treat adults. Because the generalizations discussed in this paper are also transmitted to the larger population of school personnel and mental health practitioners, they are, perhaps, equally as likely to fail to identify females who may have AD/HD.

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Dear practitioners,

I am completing my doctoral degree in psychology through The Wright Institute in Berkeley, California. As part of my doctoral requirement I am conducting a research project about Attention Deficit/Hyperactivity Disorder. In the last twenty years there has been considerable research conducted in this area. I hope to gain an understanding of what we believe AD/HD is, how it is diagnosed, and how it is treated. Clarifying what our understanding is can lead to a better understanding of how practitioners diagnose and thereby treat children with AD/HD .

Please take a few minutes to complete this questionnaire and return it to me. It should take approximately 15 minutes to complete and your responses are completely confidential. **I will not be looking for ways to match responses to specific practitioners;** I am looking for data that will help me learn what we know about AD/HD, and also clarify areas where we should turn our training efforts.

You are not obligated to fill out the questionnaire.
If you do participate in this study your name will not be on the questionnaire.
If you agree to participate in this study your name will not be used in any reports, publications, or public presentations resulting from this study.

Thank you for taking the time to review and respond to this survey. If you have comments you would like to add, please do so . I have left space for you to add your comments at the end of the questionnaire. If you would like me to mail you the results you may fill in your name and address on the final page of the survey and I will send you a summary after I have had the opportunity to analyze and write up the data.

In order to assure you that I will not be matching the questionnaires to individuals you may separate the sheet with your name and address from the questionnaire, and send it under separate cover.

Thank you again for your assistance in this research project.

Sincerely,

Emily De La Rosa, LCSW
1010 Noe Street
San Francisco, CA 94114

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A.

1. What is your professional field?

__ M.D.
__ Ph.D.
__ Other (please specify)__________

2. What is your area of clinical practice ? (if more than one please specify "1" for primary, "2" for secondary area, and so on)

__ Pediatrics
__ Child & Adolescent Psychiatry
__ Adult Psychiatry
__ Other (please specify)____________

3. How many years have you been in professional practice?

__ 2-5 years
__ 6-10 years
__ 11-15 years
__ 16 or more years (please specify how many years)__________
__ other _________________

4. In what setting do you primarily work? (If more than one setting place a "1" next to the primary setting, "2" beside secondary setting, and so on).

__ Kaiser Permanente
__ Private solo practice
__ Private group practice
__ Medical Center (not HMO)
__ Non- Kaiser HMO
__ Other (please specify)________________

5. Do you consider yourself to be familiar with AD/HD as it is described in

__ DSM III
__ DSM III-R
__ DSM IV
__ ICD-90
__ none of the above
__ other (please specify)____________

6. If Kaiser Permanente, in which department are you located?

__ Psychiatry
__ Pediatrics
__ Other (please specify) ____________

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B.

7. Do you evaluate patients who may have Attention Deficit/Hyperactivity Disorder ?

__ Yes

__ Sometimes

__ Rarely

__ No

8. In your years of professional practice what percentage of the patients that you have diagnosed with AD/HD have been **male?**

____ % male

9. In your opinion which of the following statements is **more** true of AD/HD?

__ hyperactivity is the central problem for people with AD/HD

__ inattention is the central problem for people with AD/HD

__ response inhibition is the central problem for people with AD/HD

10. In your professional experience what percentage of the patients with AD/HD have also exhibited overtly aggressive behavior (hitting, kicking, **physically** aggressive behaviors)

_______ %

11. Do you think psychostimulant medications are an effective treatment for AD/HD?

___ Yes

___ Sometimes

___ No

___ Not sure

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12. In your professional opinion what symptoms do boys with AD/HD typically have? **(check off up to 10** traits you associate with a **typical** AD/HD boy)

___ on the go
___ fidgetty
___ inattentive
___ doesn't listen
___ daydreamy
___ rejected by peers
___ submissive
___ depressed
___ destructive to self
___ avoids difficult tasks
___ disorganized
___ easily distracted
___ physically aggressive
___ immature
___ learning disabled
___ over-anxious
___ impulsive
___ restless
___ difficulty playing quietly
___ verbally aggressive
___ academically delayed
___ defiant/oppositional
___ destructive to others
___ talks excessively

13. In your professional opinion what symptoms do girls with AD/HD typically have?**(check off up to 10** traits you associate with a **typical** AD/HD girl)

___ on the go
___ fidgetty
___ inattentive
___ doesn't listen
___ daydreamy
___ rejected by peers
___ submissive
___ depressed
___ destructive to self
___ avoids difficult tasks
___ disorganized
___ easily distracted
___ physically aggressive
___ immature
___ learning disabled
___ over-anxious
___ impulsive
___ restless
___ difficulty playing quietly
___ verbally aggressive
___ academically delayed
___ defiant/oppositional
___ destructive to others
___ talks excessively

14. Please check the statement that is more true of your practice:

"When I diagnose a boy with AD/HD"---

___ I usually recommend psychostimulant medication

___ I hold off on recommending psychostimulant medication until other forms of treatment are tried first

15. Please check the statement that is more true of your usual practice:

"When I diagnose a girl with AD/HD"---

___ I usually recommend psychostimulant medication

___ I hold off on recommending psychostimulant medication until other forms of treatment are tried first

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16. If a child is diagnosed with AD/HD, but does not demonstrate overtly aggressive behaviors how would that effect your decision to treat the child with psychostimulants?

__ not at all
__ I would hold off on recommending a medication trial of psychostimulants
__ I would focus more on parenting skills with the family
__ other (please specify)________________________________

C.

For M.D.'s (**if you are not an M.D. please go to part D.**)

17. Do you prescribe medication during the course of treating patients?

___ Yes
___ Sometimes
___ No

18. Do you have triplicate prescription forms in your name ?

___ Yes
___ No

19. If you do not have triplicate forms do you refer patients out to physicians who do have triplicate forms?

___ Yes
___ Sometimes
___ No

20. Do you prescribe medication for treatment of AD/HD?

___ Yes
___ Sometimes
___ Rarely
___ No

21. In your opinion how effective is treatment of AD/HD with psychostimulants in males?

___ very effective
___ somewhat effective
___ slightly effective
___ ineffective
___ don't know

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22. In your opinion how effective is treatment of AD/HD with psychostimulants in females?

___ very effective
___ somewhat effective
___ slightly effective
___ ineffective
___ don't know

23. In your opinion how effective is psychostimulant treatment of AD/HD in those individuals who are not overtly aggressive?

___ very effective
___ somewhat effective
___ slightly effective
___ ineffective
___ don't know

D.

In this section please answer each question with **one** of the choices given.

	TRUE	FALSE	DON'T KNOW	
24.	[ ]	[ ]	[ ]	All children with Attention Deficit/ Hyperactivity Disorder are hyperactive
25.	[ ]	[ ]	[ ]	If a person responds positively to psychostimulants AD/HD is the likely diagnosis
26.	[ ]	[ ]	[ ]	Diagnosis of AD/HD should always include information from both parents
27.	[ ]	[ ]	[ ]	Diagnosis of AD/HD should always include information from teachers
28.	[ ]	[ ]	[ ]	When the diagnosis of AD/HD is made, children should be evaluated for learning disabilities
29.	[ ]	[ ]	[ ]	Children outgrow AD/HD by the time they reach adolescence
30.	[ ]	[ ]	[ ]	If a child is hyperactive in the exam room then AD/HD is likely
31.	[ ]	[ ]	[ ]	AD/HD is a fad, garbage pail for a variety of behavior problems

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	TRUE	FALSE	DON'T KNOW	
32.	[ ]	[ ]	[ ]	If a child is doing well in school, it is unlikely that the child has AD/HD
33.	[ ]	[ ]	[ ]	A child with AD/HD is most likely brain damaged
34.	[ ]	[ ]	[ ]	AD/HD can be treated with dietary changes
35.	[ ]	[ ]	[ ]	AD/HD would not exist if teachers were doing their job effectively
36..	[ ]	[ ]	[ ]	AD/HD would not exist if parents were doing their job effectively
37.	[ ]	[ ]	[ ]	Psychostimulants should be used as a last resort measure
38.	[ ]	[ ]	[ ]	Psychostimulants should be discouraged unless psychiatric illness is present
39.	[ ]	[ ]	[ ]	In all likelihood, if one psychostimulant does not produce significant results, none of them will
40.	[ ]	[ ]	[ ]	The most effective treatment for AD/HD is psychostimulant medication
41.	[ ]	[ ]	[ ]	Psychostimulant medication of AD/HD children may lead to future drug abuse
42.	[ ]	[ ]	[ ]	Psychostimulant medication of AD/HD children may lead to brain damage
43.	[ ]	[ ]	[ ]	AD/HD should be treated with psychotherapy
44.	[ ]	[ ]	[ ]	AD/HD is a confusing problem that I am not equipped to diagnose
45.	[ ]	[ ]	[ ]	AD/HD only occurs in males
46.	[ ]	[ ]	[ ]	Some symptoms of AD/HD must be present before the child is 7 years old
47.	[ ]	[ ]	[ ]	Children with AD/HD often have other psychiatric conditions as well
48.	[ ]	[ ]	[ ]	There are other mental disorders with symptoms similar to AD/HD
49.	[ ]	[ ]	[ ]	Other conditions must be ruled out before a diagnosis of AD/HD can be made

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	TRUE	FALSE	DON'T KNOW	
50.	[ ]	[ ]	[ ]	There is a higher prevalence of psychological disorders in family members of individuals with AD/HD
51.	[ ]	[ ]	[ ]	AD/HD has been found to be more common in the biological relatives of children with AD/HD
52.	[ ]	[ ]	[ ]	AD/HD is not diagnosed if the symptoms are better accounted for by another mental disorder
53.	[ ]	[ ]	[ ]	AD/HD is not diagnosed if the symptoms occur during the course of a pervasive developmental disorder
54.	[ ]	[ ]	[ ]	AD/HD is not diagnosed if the symptoms occur during the course of a psychotic disorder
55.	[ ]	[ ]	[ ]	AD/HD rarely occurs in females
56.	[ ]	[ ]	[ ]	If aggressive symptoms are not present, AD/HD is probably not the diagnosis

E.

Below is a list of characteristics one might see in children with AD/HD. Please look at those characteristics and mark off the category which best describes what ***you*** think about traits seen in children with AD/HD.

	VERY OFTEN	SOME-TIMES	RARELY	DON'T KNOW	
57.	[ ]	[ ]	[ ]	[ ]	sluggishness
58.	[ ]	[ ]	[ ]	[ ]	temper tantrums
59.	[ ]	[ ]	[ ]	[ ]	difficulty sustaining attention in tasks or play activities
60.	[ ]	[ ]	[ ]	[ ]	makes careless mistakes
61.	[ ]	[ ]	[ ]	[ ]	does not seem to listen when spoken to
62.	[ ]	[ ]	[ ]	[ ]	learning disabled

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	VERY OFTEN	SOME-TIMES	RARELY	DON'T KNOW	
63.	[]	[]	[]	[]	well behaved
64.	[]	[]	[]	[]	often does sloppy work
65.	[]	[]	[]	[]	has difficulty organizing tasks and activities
66.	[]	[]	[]	[]	fidgets or squirms
67.	[]	[]	[]	[]	moves at a fast tempo
68.	[]	[]	[]	[]	gets high grades (A's & B's)
69.	[]	[]	[]	[]	overtly physically aggressive
70.	[]	[]	[]	[]	has difficulty following rules, instructions
71.	[]	[]	[]	[]	daydreams
72.	[]	[]	[]	[]	often loses things
73.	[]	[]	[]	[]	socially withdrawn
74.	[]	[]	[]	[]	acts as if driven by a motor
75.	[]	[]	[]	[]	difficulty playing quietly
76.	[]	[]	[]	]	rejected by peers
77.	[]	[]	[]	[]	often fails to give close attention to details
78.	[]	[]	[]	[]	often talks excessively
79.	[]	[]	[]	[]	easily distracted by extraneous stimuli

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	VERY OFTEN	SOME-TIMES	RARELY	DON'T KNOW	
80.	[]	[]	[]	[]	often forgetful
81.	[]	[]	[]	[]	often has difficulty awaiting turn
82.	[]	[]	[]	[]	often leaves seat in classroom or situations where remaining seated is expected
83.	[]	[]	[]	[]	runs about or climbs excessively
84.	[]	[]	[]	[]	interrupts or intrudes on others
85.	[]	[]	[]	[]	blurts out answere before questions are completed
86.	[]	[]	[]	[]	avoids tasks that require sustained mental effort

F.

Below is a list of characteristics one might see in girls with AD/HD. Please look at those characteristics and mark off the category which best describes what ***you*** think about traits seen in girls with AD/HD.

	VERY OFTEN	SOME-TIMES	RARELY	DON'T KNOW	
87.	[]	[]	[]	[]	sluggishness
88.	[]	[]	[]	[]	temper tantrums
89.	[]	[]	[]	[]	difficulty sustaining attention in tasks or play activities
90.	[]	[]	[]	[]	makes careless mistakes
91.	[]	[]	[]	[]	does not seem to listen when spoken to
92.	[]	[]	[]	[]	learning disabled
93.	[]	[]	[]	[]	well behaved
94.	[]	[]	[]	[]	often does sloppy work
95.	[]	[]	[]	[]	has difficulty organizing tasks and activities

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	VERY OFTEN	SOME-TIMES	RARELY	DON'T KNOW	
96.	[ ]	[ ]	[ ]	[ ]	fidgets or squirms
97.	[ ]	[ ]	[ ]	[ ]	moves at a fast tempo
98.	[ ]	[ ]	[ ]	[ ]	gets high grades (A's & B's)
99.	[ ]	[ ]	[ ]	[ ]	overtly physically aggressive
100.	[ ]	[ ]	[ ]	[ ]	has difficulty following rules, instructions
101.	[ ]	[ ]	[ ]	[ ]	daydreams
102.	[ ]	[ ]	[ ]	[ ]	often loses things
103.	[ ]	[ ]	[ ]	[ ]	socially withdrawn
104.	[ ]	[ ]	[ ]	[ ]	acts as if driven by a motor
105.	[ ]	[ ]	[ ]	[ ]	difficulty playing quietly
106.	[ ]	[ ]	[ ]	]	rejected by peers
107.	[ ]	[ ]	[ ]	[ ]	often fails to give close attention to details
108.	[ ]	[ ]	[ ]	[ ]	often talks excessively
109.	[ ]	[ ]	[ ]	[ ]	easily distracted by extraneous stimuli
110.	[ ]	[ ]	[ ]	[ ]	often forgetful
111.	[ ]	[ ]	[ ]	[ ]	often has difficulty awaiting turn
112.	[ ]	[ ]	[ ]	[ ]	often leaves seat in classroom or situations where remaining seated is expected
113.	[ ]	[ ]	[ ]	[ ]	runs about or climbs excessively
114.	[ ]	[ ]	[ ]	[ ]	interrupts or intrudes on others
115.	[ ]	[ ]	[ ]	[ ]	blurts out answere before questions are completed
116.	[ ]	[ ]	[ ]	[ ]	avoids tasks that require sustained mental effort

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END OF SURVEY

IF YOU HAVE ADDITIONAL COMMENTS PLEASE ADD THEM ON THIS SHEET.

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If you would like to receive a summary of the results of this survey please fill in your name and address below and send it to me, under separate cover if you wish, in the envelope enclosed.

Thank you, again, for your participation in this research project.

Full name ______________________________

Address ______________________________

City ______________________________

State & zip ______________________________

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Appendix B

DSM- II Criteria for 308.0 Hyperkinetic reaction of childhood (or adolescence)

This disorder is characterized by overactivity, restlessness, distractibility, and short attention span, especially in young children; the behavior usually diminishes in adolescence. If this behavior is caused by organic brain damage, it should be diagnosed under the appropriate non-psychotic *organic brain syndrome.*

DSM-III Criteria for 314.01 Attention Deficit Disorder with Hyperactivity

The child displays, for his or her mental and chronological age, signs of developmentally inappropriate inattention, impulsivity, and hyperactivity. The signs must be reported by adults in the child's environment, such as parents and teachers. Because the symptoms are typically variable, they may not be observed directly by the clinician. When the reports of teachers and parents conflict, primary consideration should be given to the teacher reports because of greater familiarity with age appropriate norms. Symptoms typically worsen in situations that require self-application, as in the classroom. Signs of the disorder may be absent when the child is in a new or a one-to-one situation.

The number of symptoms specified is for children between the ages of eight and ten, the peak age range for referral. In younger children, more severe forms of the symptoms and a greater number of symptoms are usually present. The opposite is true of older children.

A. **Inattention**. At least three of the following:
(1) often fails to finish things he or she starts
(2) often doesn't seem to listen
(3) easily distracted
(4) has difficulty concentration on schoolwork or other tasks requiring sustained attention
(5) has difficulty sticking to a play activity

B. **Impulsivity**. At least three of the following:
(1) often acts before thinking
(2) shifts excessively from one activity to another
(3) has difficulty organizing work (this not being due to cognitive impairment)
(4) needs alot of supervision
(5) frequently calls out in class
(6) has difficulty awaiting turn in games or group situations

C. **Hyperactivity**. At least two of the following:
(1) runs about or climbs on things excessively
(2) has difficulty sitting still or fidgets excessively
(3) has difficulty staying seated
(4) moves about excessively during sleep
(5) is always "on the go" or acts as if "driven by a motor"

D. Onset before the age of seven.

E. Duration of at least six months.

F. Not due to Schizophrenia, Affective disorder, or Severe or Profound Mental Retardation.

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Appendix B - continued

314.00 Attention Deficit Disorder without Hyperactivity

All of the features are the same as those of Attention Deficit Disorder with Hyperactivity except for the absence of hyperactivity; the associated features and impairment are generally milder. Prevalence and familial pattern are unknown.

Diagnostic criteria for Attention Deficit Disorder without Hyperactivity

The criteria for this disorder are the same as those for Attention Deficit Disorder with Hyperactivity except that the individual never has signs of hyperactivity (criterion C).

DSM-III-R criteria for 314.01 Attention-deficit Hyperactivity Disorder

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

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

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

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

B. Onset before the age of seven.
C. Does not meet the criteria for a Pervasive Developmental Disorder.

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Appendix B - continued

DSM-III-R criteria for 314.00 Undifferentiated Attention-deficit Disorder

This is a residual category for disturbances in which the predominant feature is the persistence of developmentally inappropriate and marked inattention that is not a symptom of another disorder, such as Mental Retardation or Attention-deficit Hyperactivity Disorder, or of a disorganized and chaotic environment. Some of the disturbances that in DSM-III would have been categorized as Attention-deficit Disorder without Hyperactivity would be included in this category. Research is necessary to determine if this is a valid diagnostic category and, if so, how it should be defined.

DSM-IV Diagnostic criteria for Attention-Deficit/Hyperactivity Disorder

A. Either (1) or (2):

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

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, or other activities
(b) often has difficulty sustaining attention in tasks or play activities
(c) often does not seem to listen when spoken to directly
(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
(e) often has difficulty organizing tasks and activities
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
(h) is often easily distracted by extraneous stimuli
(I) is often very forgetful in daily activities

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

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in other situations in which remaining seated is expected
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly
(e) is often "on the go" or often acts as if "driven by a motor"
(f) often talks excessively

Impulsivity

(g) often blurts out answers before questions have been completed
(h) often has difficulty awaiting turn
(I) often interrupts or intrudes on others (e.g., butts onto conversations or games)

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

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Appendix B - continued

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).
D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Code based on type:
314.01 Attention-Deficit/Hyperactivity Disorder, Combined Type: if both Criteria A1 and A2 are met for the past 6 months
314.00 Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive Type: if Criterion A1 is met but Criterion A2 is not met for the past 6 months
314.01 Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type: if Criterion A2 is met but Criterion A1 is not met for the past 6 months

Coding note: For individuals (especially adolescents and adults) who currently have symptoms that no longer meet full criteria, " In partial remission" should be specified.

314.9 Attention-Deficit / Hyperactivity Disorder Not Otherwise Specified

This category is for disorders with prominent symptoms of inattention or hyperactivity-impulsivity that do not meet criteria for Attention-Deficit/Hyperactivity Disorder.

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