

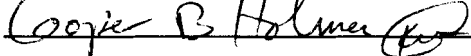
ABSTRACT

Jennifer L. Spicer for the Master of Science

in Psychology presented on August 10, 1999

Title: Use of the Child Behavior Checklist in Detecting Gender Differences

in Children with Attention-Deficit/Hyperactivity Disorder

Abstract approved: 

This study investigated the use of the Child Behavior Checklist (CBCL) in determining gender differences in girls and boys diagnosed with Attention-Deficit/ Hyperactivity Disorder (ADHD). The CBCL is a measure that is completed by the child's parent or legal guardian and indicates problem areas in the child's life through descriptions of behaviors. Participants were 32 children, 16 boys and 16 girls, from a community mental health center who were identified with a sole diagnosis of ADHD. The researcher collected data from archival records at a mental health center. The eight syndrome scales and the Internalizing, Externalizing, and Social Competencies scales T-scores were recorded, as well as each child's age and race. Results indicated that the CBCL does not reveal gender differences in girls and boys with ADHD. The CBCL seems to follow Diagnostic and Statistical Manual (1994) criteria with an ADHD sample. Statistical issues and limitations are also discussed.

USE OF THE CHILD BEHAVIOR CHECKLIST IN DETECTING
GENDER DIFFERENCES IN CHILDREN WITH
ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

A Thesis

Presented to

the Division of Psychology and Special Education

EMPORIA STATE UNIVERSITY

In Partial Fulfillment

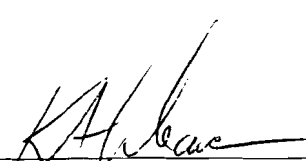
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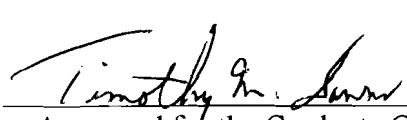
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December, 1999

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Approved for the Division of
Psychology and Special Education



Approved for the Graduate Council

ACKNOWLEDGMENTS

I would like to thank my husband, Judson, for his continued and unconditional support. You have really kept me grounded and been there for me when I needed you the most. I also would like to thank my parents, John and Leslie Green. You have been my strength and support throughout my educational pursuits. Thank you for all of the love and caring you have shown me. Next, I want to thank my sister, Abby, for being such a good sister and close friend. Each of you has always been there for me, and for that I am grateful and thankful. I thank all the rest of my family members for being there for me even though you were far away.

Gratitude and thanks goes out to each of my committee members, Dr. Cooper Holmes, my committee chair, Dr. Kurt Baker and Dr. Paul McKnab. Each of you has been patient and understanding through this process; I really appreciate your guidance and advice. Next, I would like to thank Dr. Kenneth Weaver for being supportive and believing in me. Finally, thank you to all of my friends who have been there for me; you have helped me through school and personal stresses.

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CHAPTER 1

INTRODUCTION

Recent epidemiological studies have found as many as 2 to 12% of children in the general population experience significant problems with hyperactivity, inattention, or both. Further, children with these symptoms may represent as much as 30 to 40% of the total referrals to child guidance clinics (Ostrander, Weinfurt, & Yarnold, 1998). On a simplified level, Attention-Deficit/Hyperactivity Disorder (ADHD) is typically characterized by the occurrence of inattention, impulsivity, and distractibility (Turner, 1997).

Beginning in 1996, the state of Kansas required that the Child Behavior Checklist (CBCL; Achenbach, 1991) be completed on all children and adolescents at intake when first seen at a mental health center. The CBCL is completed by the child's parent or legal guardian and indicates problem areas in the child's life through descriptions of behaviors. The use of the CBCL is widespread in clinical and research work.

Because such high percentages (2 to 12% in the general population and 30 to 40% in the clinical population) of children with ADHD symptoms have been reported on both the community and clinical levels, it is important to explore all contributing factors. One such factor is gender differences among children with ADHD. Gender differences reported with ADHD are not consistent. These differences could elicit unique emotional and behavioral characteristics, and, therefore, diagnostic criteria may be more relevant to boys or girls and require differential treatment for each gender. The present study examined the utility of the CBCL to distinguish possible gender differences in children with ADHD.

Review of Literature

The fourth edition of the Diagnostic and Statistical Manual (American Psychiatric Association, 1994; DSM-IV) defines Attention-Deficit/Hyperactivity Disorder (ADHD) as bidimensional involving inattention and hyperactive-impulsivity. It breaks ADHD into three types: Inattentive type, Hyperactivity-Impulsivity type, and Combined type. Each type manifests in early childhood. Symptom criteria for inattention includes, but is not limited to, brief attention span, not seeming to listen when spoken to, distractibility, poor academic functioning, and difficulty organizing. Some features of hyperactivity-impulsivity are fidgeting, talking excessively, leaving one's seat often or running and climbing about, difficulty waiting turns, excitability, and interrupting or intruding on others (American Psychiatric Association, 1994). Related problems that children with this disorder typically experience are impaired school performance, and other difficulties in school, familial conflicts, and often legal problems (Keller et al., 1992).

Gender Issues

Attention-Deficit/Hyperactivity Disorder varies in prevalence with gender. Boys are three times more likely to be diagnosed with ADHD than girls, and are six to nine times more likely to be seen in a clinic for treatment of ADHD. Such a high prevalence for boys with ADHD could be attributed to boys being more aggressive and antisocial, behaviors for which children are more likely to be referred (Barkley, 1990).

Girls with ADHD must be broken into two groups, girls from clinical samples and girls from community samples. Girls and boys from clinical samples have fewer and less distinctive differences. Girls from community samples tend to be less aggressive with fewer conduct problems than both girls and boys from clinical samples. Girls and

boys from clinical samples are likely to be equally aggressive (Barkley, 1990).

Differences have been found in the way gender affects other ADHD symptoms. Girls with ADHD are more socially withdrawn, have more internalizing problems such as anxiousness and depressive symptoms, and fewer behavioral and conduct problems than boys with ADHD (Barkley, 1990). Another study, using the CBCL, found nearly the opposite, reporting boys with ADHD to be more depressed, socially withdrawn, and have more internalizing symptoms than girls with ADHD (Sheikim et al., 1986).

Although girls and boys rated for ADHD can manifest the disorder differently, these differences are not usually evident on tests and measures. Chen, Faraone, Biederman, and Tsuang (1994) found an elevated T score of 60 or greater on the Attention Problems scale, the most effective scale of the CBCL to screen for ADHD in children. This scale has been shown to be equally valid for predicting for both boys and girls. Such findings suggest that girls and boys with ADHD share the core features of the ADHD syndromes. However, when predicting ADHD in girls, higher rates of anxiety and depression are consistent with the hypothesis that girls with ADHD have more internalizing symptoms than boys with ADHD (Chen, Faraone, Biederman, & Tsuang, 1994).

Attention-Deficit/Hyperactivity Disorder can have a great impact on society in terms of financial cost, stress to families, disruption in school, and its potential for leading to criminal involvement and substance abuse (Steingard, Biederman, Doyle, & Sprich-Buckminster, 1992). Looking at gender differences is another way to try to alleviate some of its impact. Attention-Deficit/Hyperactivity Disorder is typically diagnosed through structured or semi-structured interviews, which is an important part of

a comprehensive assessment. These can be costly and time consuming, especially if interviewing several informants for each child. Using the CBCL to make further discoveries about gender differences is a potentially cost and time-efficient way to probe these questions.

Child Behavior Checklist

One of the most commonly used methods for gathering an objective measure of parents or their children is to classify their responses on a behavior rating scale. One such scale Achenbach's (1991) CBCL. It was developed to comprehensively organize thinking about child psychopathology and was based on a study of children (Achenbach, 1991). The normative sample was stratified to be representative of the 48 contiguous states for socioeconomic status, ethnicity, region, and urban-suburban-rural residence.

The CBCL records the emotional and behavioral problems and competencies of children ages 4 to 18 through 138 items. Several items are loaded on to each of these scales, therefore nearly every aspect of a child's behavior is assessed. The scales on the CBCL are designed to indicate areas of difficulty the child is experiencing, as observed by the parent or guardian. The scales are based on a factor analysis of parent ratings of 4,455 clinically referred children, and normed on 2,368 children aged 4 to 18. A CBCL profile provides information on 15 scales in the form of raw scores, T scores, and percentiles. Three of the scales containing 20 items are competence scales that cover the child's activities, social relations, and school performance and are called the Activities, Social Competence, and School scales respectively. Eight syndrome scales containing the remaining 118 items describe specific behavioral and emotional problems, and two open-ended items are provided for reporting additional problems. The eight syndrome

scales are: Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. Four additional scales, Total Competence, Internalizing, Externalizing, and Total Problems, are composite scales with scores obtained by adding together other scores or scales. The child is rated for how true each item is now or within the past six months using the following scale: 0 = not true (as far as you know); 1 = somewhat or sometimes true; 2 = often or very true.

The parent or legal guardian of the client typically completes the checklist. The CBCL has been developed for parents with reading skills as low as fifth grade and is intended to be self-explanatory. Most parents taking part in the referral process come with the anticipation of reporting on their child's behavior; therefore, the CBCL is a natural part of the intake process. This meets several assumptions that underlie the development of rating scales such as the CBCL. The informant must share a common understanding with the clinician of what is being rated and can identify which of the child's behavior(s) represents the characteristic(s) of the scale(s) (Cairns & Green, 1979). The focus is always on the parent's description of the child's behavior.

Using behavioral ratings scales is often a decision based on the cost-effectiveness of such scales, and a wealth of information can be obtained in a short period of time. In addition, the CBCL collects data not otherwise collected, provides acceptable normative data, focuses on the heterogeneity of pathology, and identifies components of behaviors (Barkley, 1990).

Obtaining CBCL information on a routine basis can yield standardized documentation of a child's presenting problem(s) and competencies for purposes of case

files, gathering a variety of setting and population experience with the CBCL, and provide a baseline from which to assess change. The CBCL can be utilized in nearly all mental health contexts for children, including private practices, outpatient clinics, acute care hospitals, group homes, and residential centers.

Also relevant to the use of the CBCL in research and clinical work is the accuracy of the informant. In this case, it is the validity of parents as informants that should be considered. The diagnosis of ADHD is often based on information collected from the parents during an interview, and the CBCL is a measure that also collects information from parents. Faraone, Biederman, and Milberger (1995) researched maternal reports of children's psychopathology. They found mothers with children with ADHD were nearly perfect (reliably accurate) in their reporting. Other findings in this study suggested that mothers were more likely to correctly recall the absence of a diagnosis rather than the presence of one. However, mothers may not be good reporters of internalizing problems or symptoms in their children. This could be due to the fact that internalizing feelings are not readily observable. Overall, relying on mothers as informants is a valid way to collect information on a child, especially pertaining to a diagnosis of ADHD.

Ostrander et al. (1998) and Sheikim et. al. (1986) found that an elevated Attention Problems Scale was the most effective prediction of ADHD. However, Chen, Faraone, Biederman, and Tsuang (1994) reported past findings showing that children with ADHD also had elevations on the Internalizing Scale and lower scores for the Social Competencies scale. Their study also showed that multiple scales did not improve discriminate power over the Attention Problems scale alone.

In contrast, several studies have found that a minimum T score of 70 set by Achenbach (1991) on the Attention Problems scale is not sensitive to an ADHD diagnosis. Steingard, Biederman, Doyle, and Sprich-Buckminster (1992) found that lowering the cutoff point to 60 increased the sensitivity and predictive power of the CBCL without affecting specificity and identified 77% of children diagnosed with ADHD through interview methods. Biederman et al. (1993) also had consistent results with other studies showing that clinical usefulness and diagnostic discrimination for ADHD was excellent when using a T score of 60 as the cutoff point with the Attention Problems scale. Having a false positive, in this case referring children for a psychological evaluation who do not have ADHD, is a less harmful outcome than failing to identify children who have ADHD (Chen et al., 1994). Faraone, Biederman, Weber, and Russel (1998) also found that using 60 as a cutoff point was more effective.

Other literature has researched the utility of the CBCL to differentiate between diagnoses that share common symptoms and to help in determining comorbidity with other disorders. Turner (1997) found that the CBCL could effectively distinguish a diagnosis of ADHD from Oppositional Defiant Disorder (ODD) in a clinical sample. Biederman et al. (1993) found the CBCL able to distinguish ADHD children with and without comorbidity.

The CBCL is a widely used measure that can be helpful in many different settings and populations. A consensus among the literature and professionals in this field on gender differences in children with ADHD has not been reached. The current study will examine the ability to make such distinctions.

Conclusion

The current study was designed to investigate the following research question:
Are there gender differences on the Child Behavior Checklist for children with Attention-Deficit/Hyperactivity Disorder?

The hypothesis of the current study is that the Internalizing, Externalizing, Social Competence, and eight syndrome scales will show gender differences in children with ADHD. If CBCL scales show gender differences, then they could aid clinicians in tailoring treatment plans for girls and boys with ADHD.

CHAPTER 2

METHOD

Participants

Participants in this study were children and adolescents who went through the intake process at a rural mental health center between January 1, 1997 and June 1, 1999. There were 16 girls and 28 boys identified. To ensure equal sample sizes, 16 boys were randomly chosen from the 28 boys, using a random number chart. All participants in this study were between the ages of 4 and 18. The average age for the sample of girls was 8.88 years old, $SD = 2.51$, and the average age for the sample of boys was 10.69 years old, $SD = 2.76$. All 16 girls in this study were Caucasian. Of the 16 boys, 15 (94%) were Caucasian, and 1 (6%) was African-American.

Instrumentation

Child Behavior Checklist (CBCL); Ages 4-18. The CBCL was used as the measure in this study. The Fourteenth Edition of the Mental Measurements Yearbook (MMY) reported that the CBCL functions well for any reliability that is used. For all age and gender groups, internal consistency on the Externalizing scale ranged from .92 to .96. Reliability for the Internalizing scale was .88 to .92. The specific type of reliability calculated was not reported by the MMY. The Aggressive scale was the strongest scale of the eight syndrome scales in terms of internal consistency with .92. The MMY further reports on the validity of the CBCL, saying that it “is the standard in the field of child psychopathology against which the validity of other instruments are measured (p. 223).” The CBCL correlates highly with the Conners’ Parent Rating Scale and the Quay Problem Behavior Checklist. Data from 11 of the 15 scales were recorded. The School

scale was not included to keep the focus of this study on settings that the parent may more readily observe the child in. The Activities scale was not included due to inadequate internal consistency of .42 to .54 as reported by the MMY. The Total Competency and Total Problems scales were not included because all scales contributing to those scores were not included.

Procedure

To ensure confidentiality of all participants, only the researcher collected the data for this study. Further, no names or other identifying information were used.

Participants were referred to only as numbers throughout the study.

Approval from officials at the mental health center to use existing charts and review intake information was obtained. Data collection included recording each participant's T scores on all eight syndrome scales, plus the Internalizing, Externalizing, and Social Competence scores, gender, age and ethnicity of each participant.

Intake assessments were conducted by clinicians employed at a rural mental health center in the Midwest serving seven regional counties. The Axis I diagnosis, ADHD, used in this study was also determined by these clinicians. The parents or legal guardians of the child received the CBCL to fill out prior to the intake interview. A receptionist or other staff member who was familiar with the CBCL administered the checklist, or was present to answer any questions that the informant might have had. After the parent or guardian completed the CBCL, the scores were entered into a computer program that analyzed the data and subsequently printed out a profile for that child. The CBCL and CBCL profile were given to the clinician conducting the intake interview. The clinician's diagnosis did not usually rely on the CBCL scores because he

or she does not usually receive this information until after an intake has been completed and a diagnosis has been made. Clinicians at the center have semi-structured interviews with both the child and the parent to determine the appropriate diagnosis. Clinicians then write a report supporting the given diagnosis. The report is then reviewed by a doctoral level psychologist or a psychiatrist. Intake reports also go through Quality Management processes where they are reviewed by other qualified staff members who respond in agreement or disagreement. Clinicians responsible for intake assessments are Licensed Psychologists, Licensed Masters Level Psychologist, Licensed Masters Level Social Workers, and Licensed Clinical Social Workers. The DSM-IV is used as a reference by each of these professionals when assessing a diagnosis.

CHAPTER 3

RESULTS

The purpose of the present study was to investigate gender differences on 11 scales of the Child Behavior Checklist (CBCL) for children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). The researcher collected data from archival records at a rural community mental health center. Participants in this study were divided into two groups, girls and boys.

A multivariate analysis of variance (MANOVA) was used to perform a multivariate t test that compared the scores of the eight syndrome scales, and the Internalizing, Externalizing, and Social Competence scores of the CBCL for girls and boys assigned the diagnosis of ADHD. Findings of this analysis indicate that the CBCL did not effectively detect differences in girls and boys with ADHD, $F(11,20) = 2.19$, $p > .05$. The means and standard deviations of each of the subscales are shown in Table 1.

Cochran's homogeneity of variance test found that the population variances for boys and girls on the Social Competence scale were not normally distributed, $C(15,2) = .87$, $p = .001$. In other words, the traditional test was not a valid comparison.

Table 1

Means and Standard Deviations for T-Scores on the Child Behavior Checklist's Eight Syndrome Scales and Internalizing, Externalizing, and Social Competence Scales for Primary Diagnoses of Attention-Deficit/Hyperactivity Disorder.

Scale	Boys (n = 16)		Girls (n = 16)	
	M	SD	M	SD
Social Competence	35.25	6.87	32.00	33.63
Internalizing	59.94	15.39	59.19	14.39
Externalizing	65.69	11.83	66.00	10.72
Withdrawn	64.06	10.74	61.56	12.03
Somatic Complaints	55.69	6.78	59.63	10.14
Anxious/Depressed	64.50	11.62	63.69	12.44
Social Problems	66.56	10.74	67.31	11.22
Thought Problems	60.50	10.59	65.44	10.17
Attention Problems	70.81	10.85	75.06	7.74
Delinquent Behavior	67.94	8.08	63.00	7.80
Aggressive Behavior	68.13	12.23	69.13	13.15

Note. No gender comparisons were statistically significant.

CHAPTER 4

DISCUSSION

The results of this study suggest the Child Behavior Checklist does not reveal gender differences in boys and girls diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD). One possible reason for the CBCL's inability to detect gender differences is that girls and boys might share the core symptoms of ADHD. This brings to issue the importance of future research studying each scale individually. One example would be to look at internalizing problems such as anxiousness and depression, which are not readily observable. The Internalizing scores for both boys and girls were closer to the Externalizing scores than might be expected, indicating that children might have more internalizing issues than previously believed. Relating how children express these to a diagnosis of ADHD and scores on other CBCL scales would be helpful. Also relevant is how informants report such symptoms. Future research with developmental age ranges could also be a useful issue to examine.

All girls in this study received a \bar{T} score of 60 or greater on the Attention Problems scale, which is the suggested cutoff point for screening ADHD. All boys except one received a \bar{T} score of 60 or greater. This study seems to be consistent with the previous research reporting the Attention Problems scale with a minimum \bar{T} score of 60 as the most effective scale on the CBCL in screening for an ADHD diagnosis.

Clinicians did not generally have access to the CBCL at the time of diagnostic assessment. This means the diagnoses in this study were based on information gathered in the intake interview, which was then reviewed by a Ph.D. level psychologist or a psychiatrist who either agreed with or altered the diagnosis. Intake reports were

reviewed by other staff members during a Quality Management process. These steps in the diagnostic process are intended to increase diagnostic accuracy, but may not. In this study, diagnostic inaccuracy cannot be ruled out as a factor because interrater reliability was not established.

There is a statistical issue relevant to this discussion. Power in this study was found to be low due to the small sample sizes. This could have resulted in the lack of significance. Future research in this area would be informative using larger sample sizes that would increase testing power.

The scores for both boys and girls seem to be consistent with the Diagnostic and Statistical Manual (American Psychiatric Association, 1994) criteria of an ADHD diagnosis which shows that the CBCL appears to measure what it is meant to measure in this study. It would be expected that social competence would be low. Examples of such problems might be difficulty waiting turns, interrupting others, not seeming to listen when spoken to, and distractibility. It would also be expected that externalizing problems (i.e., aggression, delinquent behavior), social problems, and attention problems would be high because of these examples and others that can lead to difficulties at school, with the family, or legal problems. Boys and girls scored the same on the Externalizing scale. This was also true for other scales, in particular, the Internalizing and Anxious/Depressed scales. Previous research was inconsistent as to if boys or girls would tend to have more internalizing and anxious/depressed symptoms. The means in this study are the same.

Although genders did not differ significantly on the Internalizing and Externalizing scales, it is notable to mention that boys scored higher on delinquent

behavior compared to other scales (which could be considered externalizing) and girls scored higher on thought problems compared to other scales (which could be considered internalizing). Both girls and boys scored higher on the Aggressive Behavior scale (than on other scales), related to externalizing. Related to the Internalizing scale (symptoms) would be the Withdrawn scale which girls and boys both scored higher on. Because being withdrawn could indicate internalization of problems as well as be related to social problems and social competence, further research of the relationships of these scales is needed. The lack of significance in this study could be attributed to the use of ADHD participants with no comorbidity.

There are several limitations to this study. Because all participants came from a clinical background, generalizations can not be made to the general population or community samples. Researchers may be interested in comparing gender differences in children with ADHD from different settings, such as school, where some children might manifest the disorder there and not at home, or in other settings. The diagnosis of these children may include information from other settings as reported by the parents or surrogate parents in the clinical interview and when completing the CBCL. Therefore, the results of this study may not apply to situations where additional informants were used in making a diagnosis.

To the researcher's knowledge, there have not been earlier examinations of the CBCL and its measurement of gender differences in girls and boys with ADHD specifically through the 11 scales used in this study. Replication of the present study using CBCL scales is encouraged.

Advantages of using rating scales such as the CBCL in the assessment of childhood psychological disorders range from simplicity to cost-effectiveness. They are easy to use, provide a variety of information about different behaviors across environments, settings and informants, help determine the amount of deviance from “normal” child behavior, and can help to determine the effectiveness of treatment over time. Therefore, although the results of the present study were not significant, future research on the Child Behavior Checklist as it relates to gender differences in boys and girls with Attention-Deficit/Hyperactivity Disorder is encouraged.

REFERENCES

American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: Author.

Achenbach, T. M. (1991). Manual of the Child Behavior Checklist/4-18 and 1991 profile. Burlington, VT: University of Vermont Department of Psychiatry.

Barkley, R. A. (1990). Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment. New York: The Guilford Press.

Biederman, J., Faraone, S. V., Doyle, A., Krifcher-Lehman, B., Kraus, I., Perrin, J., & Tsuang, M. T. (1993). Convergence of the child behavior checklist with structured interview-based psychiatric diagnoses of ADHD children with and without comorbidity. Journal of Child Psychology and Psychiatry, 34, 1241- 1251.

Cairns, R. B., & Green, J. A. (1979). How to assess personality and social patterns: Observations or ratings? In R. B. Cairns (Ed.), The analysis of social interactions (pp. 209-226). Hillsdale, NJ: Erlbaum.

Chen, W. J., Faraone, S. V., Biederman, J., & Tsuang, M.T. (1994). Diagnostic accuracy of the child behavior checklist scales for attention-deficit hyperactivity disorder: A receiver-operating characteristic analysis. Journal of Consulting and Clinical Psychology, 62-5, 1017-1025.

Child Behavior Checklist (1999). In B. Doll and M. J. Furlong (Eds.), The fourteenth mental measurements yearbook (pp. 207-224). Lincoln, NE: The Buros Institute of Mental Measurements.

Faraone, S.V., Biederman, J., & Milberger, S. (1995). How reliable are maternal reports of their children's psychopathology? One-year recall of psychiatric diagnoses of ADHD children. Journal of American Academy of Child and Adolescent Psychiatry, 34, 1001.

Faraone, S.V., Biederman, J., Weber, W., & Russell, R.L. (1998). Psychiatric, neuropsychological, and psychosocial features of DSM- IV subtypes of attention-deficit/hyperactivity disorder: Results from a clinically referred sample. Journal of American Academy of Child and Adolescent Psychiatry, 37, 185-193.

Keller, M.B., Lavori, P. W., Beardslee, W. R., Wunder, J., Schwartz, C. E., Roth, J., & Biederman, J. (1992). The disruptive behavioral disorder in children and adolescents: Comorbidity and clinical course. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 204-209.

Ostrander, R., Weinfurt, K., & Yarnold, P. (1998). Diagnosing attention deficit-disorders with the behavioral assessment system for children and the child behavior checklist: Test and construct validity analysis using optimal discriminate classification trees. Journal of Consulting and Clinical Psychology, 66, 660-672.

Sheikim, W.O., Cantwell, D.P., Kashdim, J., Beck, N., Martin, J., Rosenberg, J. (1986). Dimensional and categorical approaches to the diagnosis of attention deficit disorder in children. Journal of the American Academy of Child and Adolescent Psychiatry, 25, 653-658.

Steingard, R., Biederman, J., Doyle, A., Sprich-Buckminster, S. (1992).

Psychiatric comorbidity in attention deficit disorder: Impact on the interpretation of child behavior checklist results. Journal of the American Academy of Child and Adolescent Psychiatry, 31, 449-454.

Turner, B. (1997). Utility of the Child Behavior Checklist in discriminating among disruptive behavior disorders in children. Unpublished master's thesis, Emporia State University, Emporia, Kansas.

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Use of the Child Behavior Checklist in Detecting
Gender Differences in Children with Attention-
Deficit/Hyperactivity Disorder
Title of Thesis

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