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Title: Utility of the Child Behavior Checklist in Discriminating Among Disruptive Behavior Disorders in Children

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Scores on the eight syndrome scales of the Child Behavior Checklist(CBCL) are analyzed to determine if they can be used to discriminate between children with Attention Deficit Hyperactivity Disorder(ADHD), Oppositional Defiant Disorder(ODD), and Conduct Disorder(CD). Three discriminant analyses are used to determine if prediction of diagnostic classification is possible using the eight syndrome scales of the CBCL. General findings suggest members of certain diagnostic groups do produce significantly differing scores on some scales. These differences do allow for moderately reliable predictions to be made. These findings suggest that while the CBCL does provide helpful information in the diagnostic process, it should not be used exclusively in the assessment process.

# UTILITY OF THE CHILD BEHAVIOR CHECKLIST IN DISCRIMINATING AMONG DISRUPTIVE BEHAVIOR DISORDERS IN CHILDREN

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# CHAPTER 1

## INTRODUCTION

Effective January 1, 1996, all mental health centers in Kansas were required to administer the Child Behavior Checklist(CBCL) to all children and adolescents at the time of intake. This instrument, typically filled out by a parent or legal guardian, is frequently used to determine problem areas in the child's life. A considerable number of these children present with Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), or a combination of these disorders. Due to the substantial overlap in the presenting symptoms, differentiating between these disorders is a very difficult task for the clinician. If a commonly administered device like the CBCL be shown to reflect accurately the subtle differences in these conditions, the diagnostic process would be an easier, and more informed one for the clinician.

Prior research on the CBCL has established a pattern of elevation on the clinical scales that is typical of children with ADHD. Specifically, studies on an earlier version of the CBCL have found that T-scores of 60 or higher on the Hyperactivity scale differentiate ADHD children from those who are not. The goal of the present study is to determine if the CBCL can accurately differentiate ADHD, CD, and ODD.

## Review of the Literature

In the current version of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994), disorders with similar symptomatology exist as separate entities. Three such disorders are Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD). Despite their status as separate disorders, they coexist at a rate high enough to frequently be viewed as related or overlapping (Barkley, 1990).

ADHD is typically characterized by the occurrence of inattention, impulsivity, and distractibility. In those children with the disorder, school performance is typically impaired, often leading to familial conflicts or difficulties in school. Due to difficulties in school performance, children will often refuse to apply themselves to their work. These behaviors are often viewed as oppositional.

ODD is typically characterized by disobedient and hostile behavior toward authority figures, usually with the absence of physical aggression. Often, symptoms of ODD are viewed as less severe than those typically found in CD. CD is generally diagnosed when behavior becomes aggressive towards others, resulting in physical harm, property loss or damage, or involves deceit, theft, or a serious rule violation (American Psychiatric Association, 1994).

Although these diagnoses frequently appear quite similar, recent research has found relatively pure cases of these disorders are likely to produce different outcomes (Barkley, 1990). This suggests the disorders are indeed different, regardless of their apparent similarity.

Symptoms particular to ODD can occur independently of ADHD, but many researchers, including Hinshaw (1987), have found symptoms to be highly interrelated, especially in clinic-referred samples. Further research, however, has suggested that important behavioral differences exist between ADHD children with ODD and ADHD children without ODD (Walker, Lahey, Hynd, & Frame, 1987), and between ADHD alone, and ADHD with either CD or ODD (Hinshaw, 1987). Such findings support the notion of ADHD as a disorder separate from ODD and CD.

Therefore, despite their many similarities, previous research supports the notion of independent diagnostic categories. However, this does not make the assessment of these disorders an easy task for the mental health clinician.

One of the most commonly used methods for gathering an objective measure of people or their children is to quantify their responses in a behavior rating scale (Barkley, 1990). Several assumptions underlie the development of rating scales. First, the informant must share a common understanding with the clinician of what is being rated.

Second, the informant understands which behavior of the child represents the attribute of the scale. Third, the informant can identify the behaviors relevant to the quality or attribute being measured (Cairns & Green, 1979).

Several properties are desirable in rating scales. The scale must possess face validity, content validity, concurrent validity, and discriminant validity. In addition, the scale should produce reliable results over time and raters. Finally, the scale should contain sufficient number of questions, worded to clearly indicate what is being rated (Barkley, 1990).

In the mental health field the decision to use behavior rating scales is often based on their cost-effectiveness. Additionally, Barkley (1990) suggests such rating scales have several other advantages over other methods including the ability to gather information from informers with many years of experience with the child over many situations, the allowance for the collection of data that may occur infrequently, the existence of acceptable normative data, the ability to focus on the diversity of pathology, and the allowance for qualitative distinctions of qualitative behaviors. One such checklist is the Child Behavior Checklist (CBCL).

The CBCL is comprised of 138 items. Of these, 20 are designed to assess social competency. The remaining 118 are

broken into eight syndrome scales. These syndrome scales are designed to indicate areas the child is experiencing difficulty with, as observed by the parent or guardian. Factor analysis of the responses of 2,300 clinic-referred children resulted in three independent age groupings, including 4-5 years, 6-11 years, and 12-16 years. The norming process involved a stratified sample of 1,300 normal children (Achenbach, 1991). One week test-retest reliability for the behavior problems scales was found to be .95. Over a three month interval, test-retest reliability was found to be .84. Additionally, interparent agreement was established at .97 for the syndrome scales (Achenbach, 1991).

Research has found that the best ADHD rating scales, such as the Connor's Parent Questionnaire, correlate only moderately (r = .30 to .50) with actual observations of ADHD symptoms taken in home or laboratory settings (Barkley, 1989). While such correlations are not extremely high, they are, according to Barkley (1989), the best correlations of any checklist measure of ADHD. The CBCL was found to have individual scale correlations between .59 and .86 with the Connor's Parent Questionnaire (Achenbach, 1991). These findings suggest that the CBCL is moderately to highly correlated with the best checklist measure of ADHD. Faraone, Biederman, and Milberger (1993) found that while

the quality of reporting differs among diagnoses, reliability and accuracy are excellent for ADHD, CD, and ODD. This finding suggests the Child Behavior Checklist can be relied on to provide consistent diagnostic information. According to Barkley (1990), the CBCL is "the most well developed, empirically derived behavior rating scale available for assessing psychopathology and social competence" (p. 286).

Several studies have examined the association between the CBCL and the clinical diagnosis of ADHD. However, most are limited in scope, and address only the Hyperactivity scale, a scale not included on the current version of the CBCL (Steingord, Biederman, Doyle, & Sprich-Buchminster, 1992). When compared to boys with no psychiatric diagnosis or another diagnosis, boys with ADHD have been found to have higher mean scores on the Hyperactivity scale of an earlier version of the CBCL. However, only a small number of the ADHD sample had T-scores in the abnormal range (greater than 70) (Sheikim, Cantwell, Kashdim, Beck, Martin, & Rosenberg, 1986). When the cutoff was lowered to 60, classification of ADHD improved to an acceptable level (Steingord et al., 1992).

In a comparison of ADHD samples with comorbidity, the CBCL has been found to differentiate between comorbid and non-comorbid ADHD (Biederman, Faraone, Doyle, Lehman, Kraus,

& Tsuang, 1993). Steingard et al. (1992) reported a significant difference on all clinical scales when comparing ADHD with comorbidity to comparisons with no psychiatric diagnosis. However, only the Hyperactivity scale differs in a comparison of ADHD without comorbidity to comparisons without psychiatric diagnoses.

Due to the similarity in symptomatology, ADHD frequently occurs in a comorbid fashion. In 33% of cases, those children diagnosed with ADHD also have comorbid diagnoses of either CD or ODD (Keller, Lavori, Beardslee,& Wunder, 1992). Additional research has revealed two populations of ADHD children, those with primarily inattention and disorganization and another with hyperactivity and impulsivity. Those with hyperactivity/impulsivity frequently have conduct disorders, while those with inattention/disorganization are frequently anxious, depressed and shy (Lahey & Carlson, 1991).

The CBCL has also been shown to discriminate between some diagnoses that commonly occur with ADHD (Biederman et al., 1993). Associations have been demonstrated between the CBCL Delinquent Behaviors scale and CD (Achenbach, 1991), (Biederman et al., 1993). In a comparison of ADHD alone and ADHD with CD, significant differences were found on the Delinquent Behavior, and Aggressive Behavior scales (Biederman et al., 1993).

A majority of previous research has focused on the use of the CBCL in the identification of ADHD. A smaller body of research focusing on the assessment of comorbid ADHD exists. To date, few studies have addressed the ability of the CBCL to discriminate between these three related, and frequently comorbid, conditions. The current study will examine the ability to make such a discrimination.

Conclusion

The current study is designed to investigate the following research question: Does the Child Behavior Checklist accurately predict membership to a diagnostic category based on scores on the syndrome scales?

The hypothesis of the current study is that the eight syndrome scales can be used to discriminate among different diagnostic groups. If the CBCL can be shown to discriminate among these three very similar diagnoses, clinicians would be able to more accurately diagnose these conditions.

# CHAPTER 2

## METHOD

The purpose of this section is to summarize the methods and procedures used to investigate the ability of the Child Behavior Checklist (CBCL) to differentiate among children with Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), and Oppositional Defiant Disorder (ODD). T-scores on the eight syndrome scales were utilized in an attempt to discriminate between these three disorders.

### Participants

Participants for this study included all children and adolescents who received an intake evaluation from a rural mental health center. The Center serves seven counties in the Midwest region of the United States. Inclusion in this study was contingent upon having received an intake assessment between January 1, 1996, and December 31, 1996.

Participants for this study included those children and adolescents who received either a primary or secondary diagnosis of ADHD, CD, or ODD. The total number of participants in this study was 128, and they ranged from 5 to 17 years of age, with a mean age of 11.78 years (SD = 3.59).

The confidentiality of participants is a serious issue and was dealt with by stringently safeguarding sensitive information. During the data collection phase, participants' names were not used and were not recorded.

Participants are referred to by number only throughout the study, and at no time were their names used in association with the sensitive information contained in their files.

Sampling procedures. The sample used in this study included all participants who fit the diagnostic criteria described previously. This sample is considered a very good representation of the clientele seeking services from this rural mental health center because of the large number of intake assessments completed during the one year time frame. Participants were assigned to a group based on their diagnostic information. These groups included: (1) participants with a single Axis I diagnosis of either ADHD($n$ = 28), ODD ($n$ = 25), or CD ($n$ = 19); (2) participants with multiple Axis I diagnoses; a primary diagnosis of ADHD ($n$ = 49), ODD ($n$ = 45), or CD ($n$ = 36), regardless of secondary diagnoses; (3) participants with multiple Axis I diagnoses, such as a combination of ADHD and CD or ODD ($n$ = 13), ODD and CD or ADHD ($n$ = 10), or CD and ADHD or ODD ($n$ = 9).

Diagnostic issues. The Axis I diagnoses used in this study were determined by the clinicians employed at the center. Clinicians at the center employ a semi-structured interview of both child and parent in the determination of appropriate Axis I diagnoses. Clinicians are then required to produce a report justifying the given diagnoses. These

reports are then reviewed by the entire division in order to ensure the appropriateness of the given diagnosis.

The clinicians responsible for intake assessment are typically one of the following: (1) Licensed Masters Level Psychologists; (2) Licensed Masters Level Social Workers; or (3) Licensed Clinical Social Workers. The clinicians currently employed by the center have between 1½ and 8 years experience.

One potential problem involves the use of the CBCL to make the intake diagnoses used in the study. If the CBCL was used in making these diagnoses, it would be impossible to separate the diagnoses from the CBCL results. In order to establish the prevalence of CBCL usage in establishing intake diagnoses, clinicians at the center were interviewed. These interviews reveal that clinicians often do not have results of the CBCL when making the original intake diagnosis. The director of children's services stated, "We only use the CBCL because it is required by the state. We administer it and report scores to the state for statistical purposes, but I do not encourage the clinicians to use it for making intake diagnoses." Most clinicians reported never using the CBCL when making the diagnosis. The remainder report using the CBCL approximately 10%-15% of the time.

## Experimental Design

Research method. The present study implemented a descriptive design in exploring the ability of the CBCL to discriminate ADHD, CD, and ODD. The independent variable in this study was the diagnosis of the participants. This independent variable was broken into several levels. For the first statistical procedure, these levels included three groups based on the participants single Axis I diagnosis. For the second statistical procedure, participants were divided into three groups based on their primary Axis I diagnosis, regardless of secondary diagnosis. The final statistical procedure was done on groups with the appropriate primary Axis I diagnosis. Inclusion was contingent on having a secondary diagnosis from the same group of diagnoses.

Procedures. Approval from the service heads at the center to use the existing database was obtained by submitting a brief research proposal to be reviewed by the directors of each service. After receiving approval, all intake information for the year January 1, 1996 to December 31, 1996 was reviewed. Information to be gathered included all Axis I diagnoses, and the T-scores of all eight syndrome scales. Each file was reviewed by only the experimenter to ensure the confidentiality of records used in the study.

# CHAPTER 3

# RESULTS

The goal of the present study is to investigate the ability of the Child Behavior Checklist (CBCL) to discriminate among three disruptive behavior disorders of childhood. Archival data from a rural, Midwestern mental health center was gathered, and participants were grouped by diagnosis. Discriminant analysis was used for data analysis.

Three separate three group discriminant analyses were performed to analyze data. In general, findings indicate certain syndrome scales may accurately differentiate among the diagnostic categories. However, predictions based on these scales are not accurate enough for diagnoses to be based solely on CBCL scores.

## Statistical Design

Three separate discriminant analysis procedures were employed to analyze data. One three group discriminant analysis was used to determine whether the Child Behavior Checklist (CBCL) can differentiate between ADHD, ODD, and CD. The first analysis employed participants with a single diagnosis of Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), or Oppositional Defiant Disorder (ODD). Another three group discriminant analysis was performed on those participants with a primary diagnosis

of ADHD, CD, or ODD, without regard to their secondary diagnosis. A final three group discriminant analysis was performed on those participants with a primary diagnosis of ADHD, CD, or ODD, and a secondary diagnosis from this group as well.

Discriminant analysis was used to reveal whether the syndrome scales of the CBCL can be used to accurately predict membership in the groups previously described. Whenever possible the scales most likely to differentiate these groups was identified.

Single Diagnoses. This analysis included all participants with single diagnosis of ADHD ($n$ = 28), ODD ($n$ = 25), or CD ($n$ = 19). Table 1 presents the means and standard deviations for each of the syndrome scales included in this analysis.

Table 2 presents values for Wilks' Lambda, F values, and level of significance for each of the syndrome scales. These results indicate that the Attention Problems, Delinquent, Somatic Complaints, and Social Problems scales allow for discrimination between ADHD, ODD, and CD.

Despite this ability, Table 3 indicates that prediction of group membership is only moderately accurate. The resulting discriminant functions accurately predicted membership in the ADHD group 64.3% of the time. The remaining predictions were even less accurate when compared to actual group membership according to intake diagnosis.

Table 1

Means and Standard Deviations for Scores on the Child Behavior Checklists's Eight Syndrome Scales for Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder

| Scale | ADHD | ODD | CD |
|---|---|---|---|
| Withdrawn | | | |
| M | 59.18 | 60.12 | 57.05 |
| SD | 9.20 | 9.92 | 9.22 |
| Somatic Complaints | | | |
| M | 56.43 | 58.44 | 55.74 |
| SD | 7.25 | 7.83 | 9.23 |
| Anxious/Depressed | | | |
| M | 62.57 | 59.96 | 58.84 |
| SD | 11.09 | 9.93 | 8.32 |
| Social Problems | | | |
| M | 64.36 | 57.88 | 59.74 |
| SD | 10.00 | 8.25 | 8.88 |
| Thought Problems | | | |
| M | 60.11 | 58.88 | 56.89 |
| SD | 9.02 | 8.96 | 7.03 |
| Attention Problems | | | |
| M | 70.07 | 61.60 | 60.32 |
| SD | 10.32 | 7.79 | 9.31 |

| | | | |
|---|---|---|---|
| Delinquent Behaviors | | | |
| *M* | 64.07 | 67.64 | 69.47 |
| *SD* | 9.61 | 9.82 | 8.49 |
| Aggressive Behaviors | | | |
| *M* | 67.36 | 65.56 | 65.21 |
| *SD* | 14.44 | 9.71 | 11.30 |

Table 2

Wilks' Lambda, F-values, and Significance Levels for the Four Significant Syndrome Scales

| Scale | Wilks' Lambda | F | p |
|---|---|---|---|
| Attention Problems | 0.81 | 8.27 | .001 |
| Delinquent Behavior | 0.72 | 5.98 | .000 |
| Somatic Complaints | 0.69 | 4.58 | .000 |
| Social Problems | 0.66 | 3.74 | .001 |

Note. Only those scales included in the first canonical discriminant function are included in this table because the first function accounted for 89.04% of the variance in the scores.

Table 3

Prediction Hit Rates for Single Diagnosis of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder.

| Actual Group | n | Predicted ADHD | Predicted ODD | Predicted CD |
|---|---|---|---|---|
| ADHD | 28 | 18 (64.3%) | 6 (21.4%) | 4 (14.3%) |
| ODD | 25 | 6 (24.0%) | 13 (52.0%) | 6 (24.0%) |
| CD | 19 | 3 (15.8%) | 6 (31.6%) | 10 (52.6%) |

Primary Diagnosis.

A second discriminant analysis was used to investigate differences among groups with a primary diagnosis of ADHD ($n$ = 47), ODD ($n$ = 45), or CD ($n$ = 36). Each of these participants had secondary Axis I diagnoses as well. However, for this analysis, the specific secondary diagnosis was not relevant for group membership. Table 4 presents mean scores and standard deviations for each of the syndrome scales.

Table 5 presents values for Wilks' Lambda, F values, and level of significance for each of the syndrome scales used in the first canonical discriminant function. Results indicate that the Attention Problems, Delinquent, Thought Problems, Social Problems, and Withdrawn scales all discriminate between participants with primary diagnoses of ADHD, ODD, and CD.

Although statistical differences appear among the scores on each of these scales, Table 6 indicates that prediction of group membership is generally unreliable and inconsistent. The best predictability occurred with those subjects with a primary diagnosis of ADHD (57.4%). The remaining predictions agreed with clinical diagnosis less than half of the time.

Table 4

*Means and Standard Deviations for Scores on the Child Behavior Checklist's Eight Syndrome Scales for Primary Diagnoses of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder.*

| Scale | ADHD | ODD | CD |
|---|---|---|---|
| Withdrawn | | | |
| *M* | 60.63 | 61.62 | 58.31 |
| *SD* | 9.53 | 9.68 | 8.57 |
| Somatic Complaints | | | |
| *M* | 58.45 | 58.40 | 56.14 |
| *SD* | 8.78 | 8.35 | 8.92 |
| Anxious/Depressed | | | |
| *M* | 63.43 | 61.27 | 59.83 |
| *SD* | 11.59 | 9.03 | 8.63 |
| Social Problems | | | |
| *M* | 65.43 | 59.38 | 60.33 |
| *SD* | 10.66 | 9.17 | 9.20 |
| Thought Problems | | | |
| *M* | 61.68 | 60.47 | 57.56 |
| *SD* | 10.21 | 8.98 | 7.02 |

| | | | |
|---|---|---|---|
| Attention Problems | | | |
| *M* | 70.55 | 63.76 | 61.67 |
| *SD* | 10.07 | 10.31 | 9.43 |
| Delinquent Behavior | | | |
| *M* | 65.91 | 68.96 | 69.36 |
| *SD* | 9.20 | 8.69 | 8.68 |
| Aggressive Behavior | | | |
| *M* | 69.17 | 67.80 | 66.03 |
| *SD* | 13.55 | 11.14 | 11.83 |

Table 5

Wilks' Lambda, F-values, and Significance Levels for the Five Significant Syndrome Scales

| Scale | Wilks' Lambda | F | p |
|---|---|---|---|
| Attention Problems | 0.87 | 9.35 | .000 |
| Delinquent Behavior | 0.80 | 7.12 | .000 |
| Thought Problems | 0.78 | 5.39 | .000 |
| Social Problems | 0.76 | 4.45 | .000 |
| Withdrawn | 0.75 | 3.84 | .000 |

Note. Only those scales included in the first canonical discriminant function are included in this table because the first function accounted for 84.15% of the variance.

Table 6

Predictive Hit Rates for Primary Diagnosis of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder.

| Actual Group | n | Predicted ADHD | Predicted ODD | Predicted CD |
|---|---|---|---|---|
| ADHD | 47 | 27 (57.4%) | 12 (25.5%) | 8 (17.0%) |
| ODD | 45 | 8 (17.8%) | 20 (44.4%) | 17 (37.8%) |
| CD | 36 | 8 (22.2%) | 11 (30.6%) | 17 (47.2%) |

Co-morbid conditions

The final discriminant analysis was conducted on groups of participants with co-morbid diagnoses of ADHD, ODD, and CD. The groups included, ADHD and ODD or CD ($n$ = 13), ODD and ADHD or CD ($n$ = 10), and CD and ADHD or ODD ($n$ = 9). Table 7 displays the mean and standard deviations for each of the syndrome scales included in this analysis. No single scale effectively discriminated among co-morbid ADHD, CD, and ODD.

Table 7

Means and Standard Deviations for Scores on the Child Behavior Checklist's Eight Syndrome Scales for Primary Diagnoses of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder, Conduct Disorder

| Scale | ADHD and ODD or CD | ODD and ADHD or CD | CD and ADHD or ODD |
|---|---|---|---|
| Withdrawn | | | |
| *M* | 64.54 | 64.80 | 59.22 |
| *SD* | 11.41 | 6.83 | 6.69 |
| Somatic Complaints | | | |
| *M* | 61.77 | 59.20 | 56.44 |
| *SD* | 11.42 | 9.99 | 8.89 |
| Anxious/Depressed | | | |
| *M* | 65.00 | 64.10 | 60.78 |
| *SD* | 11.59 | 9.09 | 6.28 |
| Social Problems | | | |
| *M* | 65.00 | 64.10 | 60.78 |
| *SD* | 11.59 | 9.09 | 6.28 |
| Social Problems | | | |
| *M* | 64.23 | 64.40 | 64.33 |
| *SD* | 9.63 | 11.29 | 10.12 |

| | | | |
|---|---|---|---|
| Thought Problems | | | |
| *M* | 65.62 | 64.80 | 59.22 |
| *SD* | 11.48 | 8.13 | 5.63 |
| Attention Problems | | | |
| *M* | 70.23 | 73.20 | 68.22 |
| *SD* | 7.84 | 12.77 | 9.86 |
| Delinquent Behavior | | | |
| *M* | 70.23 | 71.00 | 68.11 |
| *SD* | 7.87 | 4.78 | 9.31 |
| Aggressive Behavior | | | |
| *M* | 75.23 | 74.90 | 65.11 |
| *SD* | 12.15 | 9.78 | 10.88 |

# CHAPTER 4
# DISCUSSION

The findings of this study suggest that while some scales may indeed discriminate diagnostic groups, this differentiation is not in itself adequate for prediction of group membership. Therefore, it appears that while a statistical difference was indeed found to exist, clinicians should not rely entirely on the CBCL when diagnosing Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), or Conduct Disorder (CD). However, the CBCL could be helpful when used in conjunction with other sources of information.

Scores on the Attention Problems scale were found to be considerably higher for those participants with ADHD as either a single diagnosis, or with another co-existing diagnoses other than ODD, or CD. Such a finding suggests that the Attention Problems scale may reflect a behavior often viewed as a classic symptom of ADHD, distractability. For this reason, the Attention Problem scale appears to be a good indication of ADHD.

Scores for the Delinquent Behaviors scale were also found to differ significantly as well. Those participants with either single diagnoses of CD, or primary diagnoses of CD without the co-morbid existence of ADHD or ODD scored significantly higher on this scale. Such a finding suggests

that the Delinquent Behaviors scale accurately reflects the types of behavior that often warrant a diagnoses of CD.

Likewise, participants with ADHD scored considerably higher on the Social Problems scale. Children with ADHD frequently experience problems interacting with peers due to their impulsive, uncontrolled behavior, their school difficulties, and their propensity to get into trouble in school. The finding of higher social problems is, therefore, not surprising.

An additional noteworthy observation from this study involve the scale scores of those participants with single or primary diagnoses of CD. CD is by definition a more severe behavior disorder because it usually involves more violent, aggressive behaviors. The only scale on which those with CD scored higher was the Delinquent Behaviors scale. Scores on all other scales were lower than that obtained by the other groups in this study. For example, when comparing those participants with co-morbid conditions of ADHD, ODD, and CD, those participants with primary diagnoses of CD scored lower on the Aggressive scale, a finding contrary to conventional wisdom.

One possible explanation involves the person who filled out the checklist. Children with CD are generally more likely to be placed in group homes or foster placements. Therefore the child's parent may not be present at intake.

In these situations, a staff member from the group home or the foster parent often fills out the checklist. This may account for some systematic bias in the reporting of behaviors, resulting in differences in scores.

The CBCL groups some of the syndrome scales into either internalizing or externalizing groups. Scales such as Delinquent Behavior and Aggressive Behavior are in the externalizing group. The Withdrawn, Somatic Complaints, and Anxious/Depressed scales comprise the internalizing group. Although these groupings were not used in this study, participants within this study score higher on the external grouping. Children with ADHD, ODD, and CD be may differentiated by their scores within these groupings. Therefore, additional research into the issue of ADHD, ODD, and CD and scores on the internalizing/externalizing groupings is encouraged.

Many reasons may exist for the discrepancy between actual group membership and predicted group membership. One possibility is that the CBCL is simply not useful in making such predictions. Another possible reason is that the clinical diagnoses may be incorrect.

Intake diagnoses are made after limited interaction with the client and are often made based on observations by a parent or guardian. Therefore, some of the diagnoses used in this study probably were not completely accurate.

Similarly, in situations where ADHD, ODD, and CD exist in a co-morbid fashion, the individual clinician decides which diagnosis is the primary diagnosis. Such diagnostic differences could not be accounted for in this study.

Another potential diagnostic problem involves the training and experience of the clinicians. The clinicians responsible for making intake diagnoses are not equally qualified. For example, those with degrees in Social Work, in all likelihood, have not completed course work in psychopathology and the diagnoses of psychological disorders. Even those with identical degrees may not have completed the same course work in diagnostic issues. Such differences may have resulted in inaccurate intake diagnoses as well.

Finally, the experience level of the clinicians varies widely. Clinicians at the center have an average of approximately 4.5 years of experience. However, the range is quite large. Included in the present data are participants diagnosed by clinicians with from less than one to eight years of experience. Therefore, once again, additional research is recommended on the use of the CBCL to predict membership in diagnostic groups.

ADHD, ODD, and CD are psychological disorders with very similar symptoms. Differentiating among them can be a difficult task for the clinician. The use of the CBCL in

such a task, while potentially useful, should not occur independently of other sources.

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