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Co-Occurring ODD and GAD Symptom Groups: Source-Specific Syndromes and Cross-Informant Comorbidity

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Abstract

Despite important clinical and nosological implications, the comorbidity of oppositional defiant disorder (ODD) and generalized anxiety disorder (GAD) has received little attention. A clinic-based sample of 243 boys (ages 6–10 years), their parents, and teachers participated in an evaluation that involved assessments of behavioral, academic, and family functioning. ODD and GAD symptom groups were defined using various combinations of mother and teacher reports. ODD symptom groups were associated with conduct disorder symptoms, and GAD symptom groups with major depressive disorder symptoms, regardless of rater. Attention deficit/hyperactivity disorder (ADHD) symptoms were associated with ODD and GAD symptom groups; however, covarying ADHD symptoms altered few findings. The ODD+GAD symptom groups were associated with higher rates of co-occurring symptoms and risk factors within (source-specific syndromes) and across (cross-informant comorbidity) informants.

Although comorbidity is more the rule than the exception among child emotional and behavioral disorders (Angold, Costello, & Erkanli, 1999; Lilienfeld, 2003), the co-occurrence of oppositional defiant disorder (ODD) and generalized anxiety disorder (GAD) has received relatively little attention in spite of the fact that ODD likely alters the course, correlates, and treatment response for children with GAD (Flannery-Schroeder, Suveg, Safford, Kendall, & Webb, 2004; Garland & Garland, 2001; Kendall, Panichelli-Mindel, Sugarman, & Callahan, 1997). For instance, oppositional behavior in the context of an anxiety disorder may lead to reluctance to engage in exposures and comply with treatment. In addition, parents of children with anxiety disorders report that their children's oppositional behavior is particularly difficult to manage (Garland & Garland, 2001). Unfortunately, research to date generally has examined overanxious disorder, which was replaced by GAD in the Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM-IV]; American Psychiatric Association, 1994), and/or has combined multiple anxiety or disruptive behavior disorders (for reviews, see Angold et al., 1999; Russo & Beidel, 1994), which obscures specific relations between ODD and GAD.

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Despite these limitations, there is evidence that ODD and GAD co-occur at greater than chance rates across various developmental periods (Angold et al., 1999; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Loeber & Keenan, 1994). Children with persistent ODD in preschool are at risk for developing anxiety (Lavigne et al., 2001). The comorbidity of anxiety and ODD is highest during middle childhood and then decreases in adolescence (Loeber & Keenan, 1994; Russo & Beidel, 1994). In terms of prospective relations, ODD in childhood predicts anxiety in adolescence and adulthood, but anxiety in childhood does not reliably confer risk for ODD in adolescence (Burke, Loeber, Lahey, & Rathouz, 2005; Zoccolillo, 1992). However, anxiety in adolescence may increase the risk of subsequently developing ODD (Russo & Beidel, 1994). In addition, both ODD and GAD are prospectively associated with additional psychological conditions and negative sequelae, including conduct disorder (CD), major depressive disorder (MDD), substance use and abuse, and affiliation with deviant peers (Costello et al., 2003; Fergusson & Horwood, 1999; Merikangas & Avenevoli, 2000). Thus, further examination of the taxonomy of ODD and GAD likely will inform efforts aimed at treatment for and possibly prevention of these negative outcomes (Donovan & Spence, 2000; Ginsburg, 2004).

Several methodological issues impact the study of the co-occurrence of ODD and GAD, including informant disagreement concerning the frequency and severity of co-occurring symptoms. For example, in their clinic-based study of adolescents comparing parent, youth, and teacher report, Youngstrom, Findling, and Calabrese (2003) found considerable variation in levels of comorbidity between disruptive behavior syndromes and mood/anxiety syndromes based on the definitional strategy for combining informant data. Similarly, Garland and Garland (2001) reported that among children with anxiety disorders, the percentage that met criteria for ODD was 21% based on teacher report and 45% based on parent report. However, there is an emerging literature on the implications of using multiple raters or combinatorial strategies to define behavioral syndromes. Numerous strategies for aggregating information from multiple informants have been suggested (see De Los Reyes & Kazdin, 2005; Ferdinand, van der Ende, & Verhulst, 2004; Kraemer et al., 2003; MacLeod, McNamee, Boyle, Offord, & Friedrich, 1999) and considering information from different reporters who see the child in different contexts has a number of noteworthy consequences. First, prevalence rates for several emotional and behavioral disorders vary based on informant and sample type (e.g., Barkley, Fischer, Smallish, & Fletcher, 2002; Kolko & Kazdin, 1993; MacLeod et al., 1999; Rubio-Stipec, Fitzmaurice, Murphy, & Walker, 2003). Second, findings of the relations between psychosocial correlates and psychological conditions are dependent on the informant (Drabick, Gadow, & Sprafkin, 2006; Gadow et al., 2004; Kazdin, 1989; MacLeod et al., 1999; Rubio-Stipec et al., 2003). Third, prospective information regarding course, prognosis, and treatment outcome depends on the informant and type of symptoms endorsed (Barkley et al., 2002; Ferdinand et al., 2004; Kendall et al., 1997). Taken together, these findings suggest a lack of “gold standard” measures for assessing child psychopathology, and highlight the importance of considering information from multiple sources (Achenbach, 1995).

Although investigations involving child emotional and behavioral disorders have compared various reporters, relatively few have specifically examined parent versus teacher reports, which provide the most context-dependent information about the child's behavior. Studies that have compared parent versus teacher report indicate that prevalence rates and psychosocial correlates vary depending on the informant and how information is aggregated, in large part because parents and teachers identify different children as demonstrating elevated symptomatology (Boyle et al., 1996; Cluett et al., 1998; Gadow et al., 2004; MacLeod et al., 1999). Two studies specifically compared parent and teacher report of ODD symptoms. Taken together, these studies found that source-specific ODD symptom groups demonstrated better internal validity and were more differentiated in psychosocial correlates

and co-occurring symptoms than the groups defined by combining across informants (Drabick, Gadow, & Loney, 2007; Offord et al., 1996).

Although informant disagreement may be expected, explanations for this disagreement are diverse. It may result from differences in contextual demands, causes of the child's behavior, and rater interpretations of the child's motives (De Los Reyes & Kazdin, 2005; Kraemer et al., 2003). With regard to contextual demands, challenges related to peer relationships and academic performance are more salient at school, whereas at home, family demands and responsibilities are more important. These differential demands may influence whether a child exhibits ODD versus GAD in these settings, creating genuine situational differences. Moreover, children with ODD and/or GAD may engage in topographically similar oppositional behaviors, which can serve the function of having an adult withdraw a request. Informants moreover may interpret these oppositional behaviors differently (Ferdinand et al., 2004). For instance, refusing to comply with a request may be seen by a teacher as indicative of oppositionality but seen by a parent as a function of the child's anxiety about engaging in a task or vice versa. For a child who worries about several different domains of functioning (and thus manifests oppositional or avoidant behavior in multiple circumstances), it may be difficult to differentiate oppositional from anxious/avoidant behavior. Thus, differences in contextual demands, child motivations, and informant attributions may result in labeling the same child behavior (e.g., refusal to do a task) as an example of a symptom that the assessment instrument identifies as indicative of different syndromes (e.g., ODD vs. GAD). We refer to this situation as “cross-informant mixed comorbidity” (i.e., the child meets cutoff scores for multiple disorders, but informants respond to the assessment instrument in such a way as to endorse different disorders), a type of comorbidity that has yet to receive much systematic scientific study.

Although risk factors for ODD and GAD likely differ based on the methodology used to assess symptoms and factors, another explanation to consider is that this comorbid condition stems from risk factors or processes that are shared by ODD and GAD (Angold et al., 1999; Caron & Rutter, 1991). For instance, difficult temperament or negative emotionality may contribute to both the affective aspects of ODD and avoidant aspects of anxiety (Burke et al., 2005). Children who are oppositional and/or avoidant may be more challenging to parents, which may lead to critical and inconsistent parenting behaviors (Ginsburg, 2004; Patterson, DeGarmo, & Knutson, 2000). Over time, these negative parent-child interactions may increase and exacerbate child oppositional behaviors, which may lead to higher levels of parental inconsistency and detachment (Drabick et al., 2007; Kendall et al., 1997). This is especially likely if the parents are experiencing their own psychological problems or familial conflict, though dealing with an oppositional and/or avoidant child may contribute to such family conflict (Burke, Loeber, & Birmaher, 2002; Donovan & Spence, 2000). Because these children are not adequately learning how to negotiate interpersonal relationships, negative parent-child and family interactions may impede the development of age-appropriate peer relationships (Drabick et al., 2007; Greco & Morris, 2005; Kendall et al., 1997). In school, oppositional and/or avoidant behaviors can contribute to academic difficulties (Burke et al., 2002; Grover, Ginsburg, & Ialongo, 2005; Maughan & Carroll, 2006). However, the relations between ODD and academic difficulties may be mediated by cooccurring attention problems, whereas anxiety may develop secondary to academic difficulties (Burke et al., 2002; Maughan & Carroll, 2006).

Despite the possibility of shared risk factors, there are other variables that may be specific to ODD and/or GAD, which may help to distinguish between these conditions. Child sensation seeking, for example, appears to be more specific to ODD (Burke et al., 2002; Drabick et al., 2007; Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999); indeed, anxiety may attenuate sensation-seeking behaviors (Russo & Beidel, 1994). In addition, parental overcontrol is

more specific to GAD than ODD (Donovan & Spence, 2000; Ginsburg, 2004; Kendall et al., 1997).

A final methodological issue in the study of symptom co-occurrence pertains to what Angold et al. (1999) referred to as epiphenomenal comorbidity, namely, if three psychological conditions are associated with each other (e.g., ODD, anxiety disorders, ADHD), it may be that one of the combinations is simply the product of the other two pairwise combinations. That is, because ADHD is related to ODD and to anxiety disorders, the comorbidity of ODD and anxiety disorders may be better explained by their concurrent relations with ADHD. Angold et al. found evidence for this explanation because controlling for ADHD reduced the odds ratio for the co-occurrence of ODD and anxiety from 3.1 to 0.6, suggesting that the comorbidity between ODD and anxiety disorders may be an artifact of their joint association with ADHD. Nevertheless, research involving clinic-referred samples suggests that ADHD symptoms cannot fully account for the comorbidity of ODD and GAD (Burke et al., 2005; Garland & Garland, 2001).

In the study presented here, we investigated the co-occurrence of ODD+GAD in a sample of boys (ages 6–10 years) who were referred to a child psychiatry outpatient clinic. In a previous publication using this sample (Drabick et al., 2007), we found that children with and without ODD were best differentiated by a classification strategy that recognized full symptom presentation (>4 symptoms) by one (mother or teacher) versus both (mother and teacher) informants. Not unexpectedly, children rated as ODD by both mother and teacher were the most impaired, as evidenced by higher levels of sensation-seeking, maternal control, and co-occurring symptoms than the mother-only ODD and teacher-only ODD symptom groups. Although controlling for co-occurring ADHD altered some group differences, this did not alter the major conclusions. To build on these results, our study examines the implications of informant for differentiating ODD from GAD, which has received relatively less attention in the source-specific literature, especially in the case of GAD. Specifically, we classified children as having ODD Only, GAD Only, ODD+GAD, and Comp. (neither ODD nor GAD) on the basis of parent and teacher ratings, separately, to show how source specificity in group classification alters reported findings from the same sample of children. In a separate set of analyses, we also consider the implications of cross-informant mixed comorbidity (i.e., the child meets criteria for different disorders based on multiple raters, but the raters do not agree on the specific disorder). Last, we evaluate ODD+GAD symptom groups, an understudied but clinically important comorbid condition, in terms of psychosocial correlates and co-occurring conditions.

We tested the following hypotheses. First, we hypothesized that regardless of symptom group classification strategy, social and academic problems, familial conflict, parental detachment, and parental critical, inconsistent behaviors would be associated with ODD and GAD symptom groups. Second, we hypothesized that child sensation seeking and parental control would differentiate ODD and GAD symptom groups both within (source-specific syndromes) and across (cross-informant mixed comorbidity) informants. Third, we expected that more group differences would emerge in terms of co-occurring symptoms when the same informant was used to define symptom groups. Fourth, we hypothesized that mother-defined groups would be differentiated on family and parenting variables, whereas teacher-defined groups would be differentiated on academic and peer variables. Fifth, we expected that cross-informant, mixed ODD+GAD groups would be associated with higher levels of co-occurring symptoms (e.g., ODD/M+GAD/T > ODD/M). We also expected that the cross-informant, mother-rated ODD and teacher-rated GAD group (ODD/M+GAD/T) would be associated with higher levels of familial conflict, parental detachment, and negative parental behaviors, whereas the cross-informant teacher-rated ODD and mother-rated GAD group (ODD/T+GAD/M) would be associated with elevated parental control, academic difficulties,

and peer relationship problems. Last, we tested whether findings related to ODD and GAD symptom groups are better accounted for by their joint association with ADHD symptoms (epiphenomenal comorbidity; see Angold et al., 1999) by repeating our analyses and controlling for ADHD symptoms.

METHOD

Participants

The participants were a heterogeneous group of 243, 6- to 10-year-old ($M = 7.9 \pm 1.3$) boys who were evaluated a diagnostic study conducted in a child psychiatry outpatient clinic. Participants were recruited from a child psychiatry outpatient clinic (55%); a parent support group (39%); and directly from parents, schools, or other professionals (6%). Potential participants were excluded if their IQ was below 70; if they were actively psychotic; if they had a major medical condition, active seizure disorder, pervasive developmental disorder, or Tourette's disorder; if they were not living with at least one biological parent; or if they needed immediate evaluation for psychiatric hospitalization. Racial/ethnic distribution was Caucasian (89%), African American (5%), Latino (4%), and Other (2%). Families represented the full range of social strata as defined by the Hollingshead (1975) index. Further details of the sample appear in prior publications (Gadow et al., 2004; Loney, Carlson, Salisbury, & Volpe, 2005).

Measures

Child symptom inventory—Mothers and teachers rated child symptoms using their respective versions of the Child Symptom Inventory–4 (CSI-4; Gadow & Sprafkin, 1994, 2002), which contains the behavioral symptoms of most childhood disorders described in the *DSM-IV*. Individual items bear one-to-one correspondence with *DSM-IV* symptoms. There are two scoring procedures: Symptom Count (categorical) scores, 0 (*never/sometimes*), 1 (*often/very often*); and Symptom Severity (dimensional) scores, 0 (*never*), 1 (*sometimes*), 2 (*often*), 3 (*very often*). Symptom Severity scores are the sum of the item scores for a particular symptom category. For Symptom Count scores, a specific symptom is considered to be a clinically relevant problem if it is rated as occurring “often” or “very often.” When the total Symptom Count score equals or exceeds the number of symptoms specified by *DSM-IV* as necessary for a diagnosis, the child receives a Screening Cutoff score of “yes” for the disorder. Although the CSI-4 contains the behavioral symptoms of specific disorders, it does not include additional diagnostic criteria such as age of symptom onset or functional impairment. For this and other reasons, Screening Cutoff scores do not signify a clinical diagnosis. The validity of the parent and teacher versions of the CSI-4 has been examined in scores of studies and includes comparisons with dimensional rating scales, laboratory measures, chart diagnoses, and structured psychiatric interviews; comparisons between symptomatic and asymptomatic samples and between samples with specific behavioral syndromes; and response to behavioral and pharmacological interventions (e.g., Gadow & Sprafkin, 1994, 2002, 2006). With regard to comparisons to chart diagnoses (Gadow & Sprafkin, 1994, 2002) and structured psychiatric interviews (Sprafkin, Gadow, Salisbury, Schneider, & Loney, 2002), sensitivity and specificity of parent Screening Cutoff scores range from .70 to .90 for ADHD, ODD, and CD, which is fair to excellent. The specificity of the parent GAD and MDD Screening Cutoff scores is good to excellent, though sensitivity is low (.56). However, the sensitivity of Symptom Severity cutoff scores is fair to excellent for all five disorders.

Mothers and teachers rated ODD and GAD symptoms (8 items each) using their respective versions of the CSI-4 ($r_s = .91$ and $.92$ for mother- and teacher-reported ODD, respectively, and $r_s = .80$ for both mother- and teacher-reported GAD). For both mother- and teacher-

reported symptoms, four mutually exclusive groups were formed based on the Screening Cutoff scores: ODD, GAD, ODD+GAD, and Comp. (psychiatric comparison group, elevated on neither ODD nor GAD). For the mother-reported Comp. group symptoms ($n = 129$), few boys received Screening Cutoff scores for CD ($n = 5$, 4%) or MDD ($n = 1$, 1%), but a larger proportion received Screening Cutoff scores for ADHD, Combined type (ADHD:C, $n = 24$, 19%). For teacher-reported symptoms, children in the Comp. group ($n = 173$) received Screening Cutoff scores as follows: CD ($n = 5$, 3%), MDD ($n = 1$, 1%), and ADHD:C ($n = 30$, 17%). Owing to modest agreement between mother and teacher CSI-4 ratings (ODD: $r = .25$, $p < .01$, Screening Cutoff = .11; GAD: $r = .15$, $p < .05$, Screening Cutoff = .08), the number of boys who received Screening Cutoff scores based on both mother-and teacher-reports was relatively low, as follows: ODD ($n = 15$), GAD ($n = 2$), ODD+GAD ($n = 2$), and Comp. ($n = 103$). Commonly comorbid *DSM-IV* symptoms, defined using the Symptom Severity (dimensional) scoring procedure, were examined also. Mothers and teachers rated the following comorbid symptoms: ADHD:C (18 items; both α s = .92); CD (mother report: 15 items; $\alpha = .89$, teacher report: 9 items, $\alpha = .78$); and MDD (10 items; both α s = .79).

Parenting behaviors—Mothers completed the Parents' Report (PR; Dibble & Cohen, 1974), which contains 20 behavioral items that pertain to how parents interact with their child. Items were rated using a 7-point scale, from 0 (*never*) to 6 (*always*). Three subscales (3 items each) were examined: Control through Hostility ($\alpha = .71$), Consistency ($\alpha = .70$), and Detachment ($\alpha = .67$). In community-based samples of children, the PR demonstrates good internal consistency (α s = .83–.91; Atzaba-Poria, Pike, & Deater-Deckard, 2004) and shows expected associations with parent-rated internalizing and externalizing symptoms (Atzaba-Poria et al., 2004; O'Connor, Deater-Deckard, Fulker, Rutter, & Plomin, 1998). In this clinic-based sample of children, scales of the PR are concurrently associated with ADHD (Gadow et al., 2004), ODD (Drabick et al., 2007), depression and CD (Drabick et al., 2006), and prospectively (5 years later) with CD (Drabick et al., 2006).

Family factors—Mothers completed the Family Environment Scale, Form R (FES; Moos & Moos, 1994), which assesses family social environments. Respondents were asked to indicate (true or false) whether the statement characterizes their family. The Conflict subscale (10 items, $\alpha = .72$) was used. In community-based samples of children, the FES Conflict scale evidences good internal consistency (α s = .66–.79; Ackerman, Schoff, Levinson, Youngstrom, & Izard, 1999; Sanford, Bingham, & Zucker, 1999) and convergent validity with observed and self-report measures of family conflict (Sanford et al., 1999) and is associated with internalizing and externalizing symptoms in nonreferred children (Ackerman et al., 1999) and with parent-child conflict, CD, and depression in this clinic-referred sample (Drabick et al., 2006).

The Short Marital Adjustment Test (MAT; Locke & Wallace, 1959), a widely used 15-item, self-report measure, was used to assess the mothers' satisfaction with their current marriage or relationship ($\alpha = .87$). Higher scores indicate more dissatisfaction. The mean dissatisfaction score was used. The MAT demonstrates adequate internal consistency; for instance, Grych, Harold, and Miles (2003) reported alphas of .83 and .84. The MAT reliably discriminates distressed from nondistressed couples (Grych et al., 2003; Lawrence & Bradbury, 2001) and is prospectively associated with physical aggression between partners (Lawrence & Bradbury, 2001). The MAT is associated with observed and reported conduct problems in clinic-referred children (Webster-Stratton, 1989), depression in this clinic-based sample (Drabick et al., 2006), and child self-blame and internalizing symptoms in a community sample of 11- to 12-year-old children (Grych et al., 2003).

Social problems—Mothers and teachers rated child Social Problems using the Child Behavior Checklist (CBCL; Achenbach, 1991a; 8 items, $\alpha = .75$) and Teacher Report Form of the CBCL (TRF; Achenbach, 1991b; 13 items, $\alpha = .79$), respectively. Items were rated on a scale from 0 (*not at all true*) to 2 (*very often true*). The mean scores for these scales were used. The CBCL and TRF are among the most commonly used measures in published studies of child psychopathology and demonstrate adequate reliability and validity and expected relations with childhood internalizing and externalizing symptoms (see Achenbach, 1991a, b). Moreover, childhood Social Problems scores are prospectively related to anxiety disorders in adolescence and adulthood in community-based samples (Roza, Hofstra, van der Ende, & Verhulst, 2003).

Child sensation seeking—The Sensation Seeking Scale for Children (SSSC; Russo et al., 1993) contains 26 items with a forced-choice format ($\alpha = .79$) and is intended to assess for a sensation-seeking trait. The total score was used. Russo et al. reported good internal consistency ($\alpha = .83$) and split-half reliability ($r = .85$) for the total score for the SSSC in a community-based sample of youth 9 to 15 years old. The SSSC total score differentiates clinic controls from clinic-referred children with ADHD (Gadow et al., 2004), ODD (Drabick et al., 2007), and CD (Russo et al., 1993) and is associated with callous-unemotional traits in clinic-referred children (Frick, O'Brien, Wootton, & McBurnett, 1994).

Academic performance—The Academic Functioning scale of the TRF was used to assess the teacher's perception of academic performance. Perceived performance was rated on a scale from 1 (*far below*) to 5 (*far above grade level*); the mean score was used. Achenbach (1991b) reported that the Academic Functioning scale has a 15-day test-retest reliability in 8- to 9-year-old children of .93, and this scale differentiates children who require academic intervention from those who do not. In this sample of clinic-referred children, the Academic Functioning scale is positively associated with standardized reading performance and Full Scale IQ scores, negatively associated with depressive symptoms (Drabick et al., 2006), and differentially related to subtypes of ADHD (Gadow et al., 2004). The Academic Functioning scale is negatively associated with child attention problems and aggressive behaviors among adolescents (Barriga et al., 2002).

Procedure

All procedures were reviewed and approved by a university Institutional Review Board. In terms of recruitment, parents of children on the waiting list for a clinic evaluation were provided a brochure about the study by clinic personnel. Parents on a waiting list for an ADHD support group were mailed information regarding the study. Last, the clinic received direct referrals from parents, schools, physicians, and other professionals. Because of these multiple and broad recruitment strategies, the exact participation rate is unobtainable.

Mothers gave written consent to participate. Mothers who had signed consent forms were mailed rating scales, questionnaires, and a school assessment package. Mothers took this package to school personnel, who mailed it to the project director upon completion. Upon receipt of parent and teacher ratings, mother and child were scheduled for an extensive evaluation. Boys provided verbal assent prior to participation. Subsequently, they were administered a battery of tests. Both the child and mother were paid for their participation.

Data Analysis

Four sets of four-way analyses of variance (ANOVAs) were conducted. Two of these sets examined ODD and GAD symptom groups within raters (source-specific syndromes) and two sets examined ODD and GAD symptom groups across raters (cross-informant mixed comorbidity). We tested for homogeneity of variances for each ANOVA using Levene's

statistic and found the variances to be acceptable. We conducted preliminary chi-square tests for categorical variables and ANOVAs for continuous variables to determine whether groups differed with regard to race/ethnicity, age, socioeconomic status (SES), or special education. To control for familywise inflation of Type I error rates, follow-up Scheffé tests were used to localize differences between symptom groups. Owing to the exploratory nature of these analyses, strategies to control for the number of ANOVAs were not employed, with the exception of a Bonferroni correction for scales derived from the same measure. Effect sizes (η^2) are reported for the main effects and can be interpreted as follows: .10 (small), .25 (medium), and .40 (large; Cohen, 1988).

RESULTS

Comparisons of Source-Specific ODD and GAD Symptom Groups

Four mutually exclusive groups were created for each rater: (a) elevated on mother-defined ODD (ODD/M), mother-defined GAD (GAD/M), and mother-defined ODD+GAD (ODD/M +GAD/M); and a comparison group of children low on both ODD/M and GAD/M (Comp.), and (b) elevated on teacher-defined ODD (ODD/T), teacher-defined GAD (GAD/T), and teacher-defined ODD+GAD (ODD/T+GAD/T); and children low on ODD/T and GAD/T (Comp.). The teacher-defined source-specific groups differed on SES (Comp. > ODD/T +GAD/T); thus, SES was covaried in subsequent tests involving the teacher-defined groups.

Mother-defined groups—The ODD/M and GAD/M symptom groups were significantly different from the comparison group for the majority of variables examined (see Table 1). There were no differences between the ODD/M and GAD/M symptom groups other than expected differences on ODD and GAD symptom severity. The ODD/M+GAD/M symptom group was more impaired than the ODD/M and GAD/M symptom groups for mother-rated ODD, CD, and MDD. Compared to the ODD/M symptom group, the ODD/M + GAD/M symptom group was rated as exhibiting higher mother-rated GAD symptoms. Compared to the GAD/M symptom group, the ODD/M + GAD/M symptom group received higher FES Conflict scores.

Teacher-defined groups—The ODD/T and GAD/T symptom groups were significantly different from the comparison group for the majority of variables examined (see Table 2). In addition to the expected differences in ODD and GAD symptom severity, the ODD/T symptom group was rated as exhibiting higher mother- and teacher-rated CD symptoms than the GAD/T symptom group. The GAD/T symptom group was rated as exhibiting higher teacher-rated MDD symptoms than the ODD/T symptom group. When compared to the ODD/T symptom group, the ODD/T + GAD/T symptom group received higher ratings of teacher-rated MDD and GAD symptoms and marital dissatisfaction (MAT). When compared to the GAD/T symptom group, the ODD/T + GAD/T symptom group received elevated ratings of teacher-rated ODD and mother- and teacher-rated CD symptoms.

Comparisons of Cross-Informant Mixed ODD and GAD Symptom Groups

The first set of cross-informant mixed comorbidity analyses compared four symptom groups: ODD/M Only, GAD/T Only, ODD/M + GAD/T (elevated on both mother-defined ODD and teacher-defined GAD symptom groups), and Comparison (elevated on neither mother-rated ODD or teacher-rated GAD symptoms). Because the cross-informant ODD/M and GAD/T symptom groups differed on age (ODD/M + GAD/T > ODD/M) and SES (Comp. > ODD/M + GAD/T), these variables were covaried in subsequent tests. The ODD/M + GAD/T and ODD/M Only symptom groups did not differ from each other, but the former exhibited more severe mother-rated ODD and CD symptoms than the GAD/T Only group (see Table 3). In addition, the ODD/M + GAD/T and GAD/T Only groups were rated

by teachers as having more severe ADHD:C, GAD, and MDD symptoms than the ODD/M symptom group. The ODD/M + GAD/T symptom group also obtained higher marital dissatisfaction scores than both the ODD/M and GAD/T symptom groups. The GAD/T Only symptom group received higher scores than the ODD/M symptom group for TRF Social Problems.

The second set of cross-informant mixed comorbidity analyses compared ODD/T Only, GAD/M Only, ODD/T + GAD/M, and Comparison groups. As in the previous set of analyses, the comorbid symptom group was often similar to one, but not both, single-symptom groups (see Table 4). For example, the ODD/T + GAD/M and ODD/T Only symptom groups were rated by teachers as having more severe ODD and CD symptoms, and TRF Social Problems than the GAD/M M symptom group. The ODD/T + GAD/M and GAD/M symptom groups did not differ from each other, but differed from the ODD/T symptom group, in terms of mother-rated GAD and MDD symptoms. In addition, the ODD/T + GAD/M symptom group received higher ratings of teacher-rated MDD symptoms and PR Control than the GAD/M Only symptom group, higher ratings of CBCL Social Problems than the ODD/T Only symptom group, and higher mother-rated CD symptoms and marital dissatisfaction scores than both the GAD/M Only and ODD/T Only symptom groups. Last, the ODD/T Only symptom group was rated as exhibiting higher levels of teacher-rated ADHD:C symptoms and child-reported sensation seeking than the GAD/M Only symptom group, and the GAD/M Only symptom group was rated as exhibiting elevated mother-rated ADHD:C symptoms compared to the ODD/T Only symptom group. It should be noted that the effect sizes for the omnibus group differences and the direction of these differences varied greatly depending on the informant used, a pattern that is particularly pronounced in the case of the CSI-4 scales.

Controlling for ADHD Symptoms

To examine whether the findings related to ODD and GAD symptom groups are better accounted for by their joint association with ADHD, the analyses were conducted again controlling for ADHD symptoms. For the source-specific analyses, the respective ADHD symptoms were covaried. For the cross-informant analyses, mother- and teacher-rated ADHD symptoms were covaried. When teacher-rated ADHD symptoms were covaried for the teacher-rated, source-specific symptom groups (Table 2), group differences for PR Control were no longer significant. When mother-rated ADHD symptoms were covaried, the difference between the ODD/M + GAD/T and comparison groups was no longer significant for CBCL Social Problems (Table 3), suggesting these group differences were likely a function of the child's co-occurring ADHD symptoms.

DISCUSSION

Findings provide additional support for the notion that source specificity is an important consideration in taxonomic research, that the co-occurrence of oppositional behavior and anxiety poses interesting interpretive questions, and that cross-informant, mixed comorbidity is a viable concept that warrants further study. Consistent with other findings (Garland & Garland, 2001) and the separate ODD and GAD literatures (Burke et al., 2002; Donovan & Spence, 2000), ODD/M + GAD/M was associated with higher levels of familial conflict and more co-occurring symptoms than the ODD/M, GAD/M, and comparison groups. The teacher-defined, source-specific syndrome groups (ODD/T Only, GAD/T Only) were differentiated from each other on more measures than the mother-defined counterparts, similar to previous research indicating that psychosocial correlates vary depending on informant used (e.g., Boyle et al., 1996; Cluett et al., 1998; Drabick et al., 2006). Teachers and mothers reported elevated CD symptoms in the ODD/T Only symptom group and teachers reported elevated MDD symptoms in the GAD/T Only symptom group, indicating

that co-occurring symptoms for the teacher-defined groups were consistent with their respective broad-band internalizing/externalizing spectra (Achenbach, 1991a, b). This pattern of findings suggests that mothers may have a tendency to provide elevated ratings in multiple areas, whereas teachers are more selective when endorsing significant symptoms. Alternatively, because classroom constraints may minimize the display of additional symptoms, teachers may observe fewer significant co-occurring symptoms than mothers (Kraemer et al., 2003).

Our findings also shed light on the significance of considering cross-informant, mixed comorbidity for identifying children who are perhaps in greatest need of intervention. Both cross-informant, mixed comorbidity groups (ODD/M + GAD/T, ODD/T + GAD/M) were at significantly elevated risk for additional co-occurring symptoms and negative correlates. For example, the parents of children in both of these mixed, comorbid groups reported elevated levels of marital dissatisfaction, which is consistent with evidence that this may be a nonspecific risk factor for childhood psychological conditions (Drabick et al., 2006). Nevertheless, the ODD/T + GAD/M group was rated on more variables as being more impaired than the ODD/M + GAD/T group. For instance, the ODD/T + GAD/M group was rated as exhibiting higher levels of CD and MDD symptoms and social problems, and requiring more parental control relative to the other groups. One possible explanation for these relations is that children who are experiencing peer relationship difficulties are perceived by their mothers as anxious but by their teachers as oppositional, perhaps because they are less likely to talk about their emotions or social problems with their teachers. At home, mothers report exercising more control with these children, consistent with previous research linking parental overcontrol and child anxiety (Donovan & Spence, 2000; Ginsburg, 2004; Kendall et al., 1997). Moreover, the child's behaviors that are viewed by the teacher as oppositional may be interpreted by the mother as stress-induced anxiety resulting from marital problems. Whether this cross-informant, mixed comorbid condition is a function of differences in rater attributions or contextual features or is a "true" comorbidity (i.e., both disorders are exacerbated by the same variables), ODD/T + GAD/M is associated with specific features that have implications for future research in assessment and treatment. Last, differences between the mixed comorbid and single symptom groups could have important implications. For instance, boys in the ODD/M + GAD/T group obtained higher teacher ADHD:C ratings than the ODD/M Only group, indicating that children who are perceived as anxious, inattentive, and hyperactive/impulsive in school are more likely to be oppositional at home. Alternatively, the contextual demands of the school setting may minimize the display of ODD behaviors and/or exacerbate the display of ADHD:C behaviors.

As has been the case in previous research (e.g., Drabick et al., 2006; Gadow et al., 2004; Kazdin, 1989; MacLeod et al., 1999; Rubio-Stipec et al., 2003), the psychosocial correlates associated with both within-informant or mixed-informant symptom groups were often dependent on the informant used to define the symptom groups. For example, mother-rated parental detachment was higher for mother-rated ODD symptom groups. In addition, differences in social problems were more evident when the informant for symptoms and social problems was the same (see Kazdin, 1989). These differences among informants are further complicated by the fact that parents and teachers identify different children as exhibiting elevated symptoms (Ferdinand et al., 2004; Rubio-Stipec et al., 2003). Informants are thus not interchangeable, and informant discrepancies can provide valid information relevant to correlates, and potentially the course and prognosis, for children with ODD and GAD symptoms (Barkley et al., 2002; Ferdinand et al., 2004; Kendall et al., 1997; Rubio-Stipec et al., 2003). Thus, our study extends findings related to parent versus teacher reports in children with ODD symptoms (Drabick et al., 2007; Offord et al., 1996) and contributes to the literature through consideration of GAD symptoms.

One of the study's objectives was to examine the implications of ADHD as an epiphenomenon of ODD and GAD comorbidity (Angold et al., 1999). In considering co-occurring ADHD symptoms, the pattern of relations was dependent on the informant, and this was true for both source-specific and cross-informant, mixed comorbidity analyses. Teacher-defined symptom groups were associated with teacher-rated ADHD symptoms, and mother-defined symptom groups were associated with mother-rated ADHD symptoms. However, controlling for ADHD symptoms did not modify the majority of the results, indicating that the comorbidity of ODD and GAD was not better accounted for by their joint co-occurrence with ADHD. The group differences that were modified when ADHD was controlled involved parental use of controlling discipline strategies and child social problems. This suggests that the relations among ODD, GAD, and these parent-child and peer variables may be at least partially attributable to the child's concurrent ADHD symptoms. This result is consistent with findings in clinic-based (Burke et al., 2005; Garland & Garland, 2001) but not community-based (Angold et al., 1999) samples.

Limitations

Our findings are subject to several qualifications. First, our results pertain to a clinic-based sample of elementary-school-age boys and therefore may not be generalizable to girls, community-based samples, different age groups, or other disorders. Given that middle childhood is associated with elevated rates of co-occurring ODD and GAD (Russo & Beidel, 1994) and our focus on assessment issues that can inform treatment, the sample characteristics were relevant to the study's goals. However, comorbidity levels and determination of case ascertainment differ by not only informant but also the nature of the sample, with higher numbers of cases and risk factors, higher levels of comorbidity and symptom severity, and less agreement often found in clinic-versus community-based samples (Angold et al., 1999; Kolko & Kazdin, 1993; MacLeod et al., 1999). Second, given the relatively small group sizes in some symptom groups and number of comparisons, these findings require replication, including tests in nonreferred samples. Third, we were unable to determine definitively what variables might account for rater differences in endorsements of ODD and GAD symptoms. Future research that considers contextual factors that influence informant perspectives (e.g., parental psychopathology, familial conflict, child acceptance; De Los Reyes & Kazdin, 2005; Kolko & Kazdin, 1993; MacLeod et al., 1999) could speak to this issue. Fourth, though not inconsistent with previous research (e.g., Drabick et al., 2007; Gadow et al., 2004; Kazdin, 1989), there was little external validation of the symptom groups by variables that were unrelated to the informants whose ratings served as the basis of configuring the ODD and GAD groups. Fifth, the FES as a measure is relatively less supported by psychometric or other data, though its psychometric properties in the current sample were good. Finally, ODD and GAD symptom groups were defined using *DSM-IV* rating scales; thus, findings may diverge from those derived from structured interviews or other diagnostic methods. For instance, fewer children may have been identified using a structured interview given that impairment criteria were not employed. However, *DSM-IV*-based Screening Cutoff scores were used and all of the children were referred for a clinical evaluation.

Implications for Research, Policy, and Practice

These findings suggest several potentially shared factors that may confer risk for co-occurring ODD and GAD (e.g., excessive use of controlling strategies, family conflict), but much more needs to be learned about the roles of ADHD, genetics, biological processes, and Child \times Environment interactions that contribute to the affective components of ODD, avoidant aspects of GAD, and the interpersonal difficulties associated with both ODD and GAD (Burke et al., 2005; Lilienfeld, 2003). Careful conceptualization and delineation of risk factors could aid in prediction of ODD and GAD. For instance, Frick et al. (1999)

demonstrated that considering trait anxiety and fearfulness as distinct characteristics resulted in differentiated relations with conduct problems and antisocial traits, which clarified some discrepancies in the literature related to co-occurring anxiety and conduct problems. Moreover, consideration of the child's age and informants used are critical for interpreting prevalence rates, correlates, and courses of child emotional and behavioral disorders (Barkley et al., 2002; Rubio-Stipec et al., 2003). Given the well-documented differences in risk factor-symptom relations over time (Burke et al., 2005), longitudinal research can contribute to an understanding of how this comorbidity unfolds and whether these variables are best conceptualized as risk factors, correlates, or sequelae.

Our findings indicate that aggregating information across informants may mask important within-informant group differences, which is consistent with prior work (e.g., Barkley et al., 2002; De Los Reyes & Kazdin, 2005; Ferdinand et al., 2004; Kazdin, 1989; Offord et al., 1996; Rubio-Stipec et al., 2003). Thus, considering ODD and GAD as source-specific syndromes may be useful for recognizing important contextual factors and informant perspectives and thereby helping construct interventions that are directed at the settings in which problem behaviors occur. For example, conducting a functional analysis to determine whether a child's oppositional behavior is consistent with ODD and/or GAD could facilitate treatment planning. In addition, asking reporters about their attributions for the child's behavior and considering contextual factors could aid in determining the sources of informant discrepancies and cross-informant comorbidity (De Los Reyes & Kazdin, 2005; Kolko & Kazdin, 1993). Future research and revisions to the diagnostic system could address whether informant discrepancies are conceptually meaningful and the implications these discrepancies have for our conceptualization of childhood conditions.

Our study demonstrated that ODD + GAD (within-and cross-informant) was associated with parent-child and familial conflict, which is consistent with previous research (Garland & Garland, 2001). Similarly, treatments for GAD that use exposure tasks often engender oppositional behavior from children; however, this oppositional behavior is responsive to treatment (Flannery-Schroeder et al., 2004; Garland & Garland, 2001; Kendall et al., 1997). Interventions that address not only the child's ODD and GAD symptoms but also potential shared processes (e.g., parenting behaviors, parental relationship problems, child ADHD symptoms) may help to prevent the development or exacerbation of co-occurring symptoms. Given the prospective relations between ODD and GAD, consideration of developmental processes, child age, primary diagnosis, and relations among comorbid conditions is also critical for determining treatment focus and sequencing (Clarkin & Kendall, 1992). Future research will be necessary to determine whether treatment of one condition precludes the development of the other (i.e., tertiary prevention) and whether additional attention to relevant correlates (e.g., contextual factors) can improve treatment outcomes.

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TABLE 1

Means (SD) and Comparison Statistics for Mother-Rated ODD and GAD Symptom Groups

Variable	ODD/M ^a	GAD/M ^b	ODD/M+GAD/M	Comparison	F(3, 239)	Post Hoc	Effect Size
Mother Reports							
CSI-4 Symptom ratings							
ADHD:C	35.80 (9.39)	36.53 (12.2)	40.31 (9.12)	27.82 (11.5)	15.70 [†]	O,G,O+G>C	.41
ODD	15.72 (3.78)	7.81 (3.23)	18.15 (4.09)	6.28 (3.27)	158.78 [†]	O+G>O>G,C	.82
Conduct Disorder	3.00 (3.04)	1.47 (2.82)	4.79 (3.83)	0.83 (1.91)	22.50 [†]	O+G>O,G,C; O>C	.47
GAD	6.91 (3.02)	12.19 (2.76)	13.41 (2.44)	4.80 (2.74)	90.09 [†]	G,O+G>O>C	.73
MDD	5.97 (3.01)	5.81 (3.34)	8.30 (3.02)	3.44 (2.13)	32.97 [†]	O+G>O,G>C	.54
CBCL Social Problems	4.72 (2.66)	5.25 (2.41)	5.92 (2.56)	3.47 (2.50)	9.43 [†]	O,G,O+G>C	.33
PR: Control	7.62 (4.42)	6.19 (4.15)	7.68 (5.34)	6.39 (4.06)	1.69	NA	.14
PR: Consistency	16.00 (3.35)	16.94 (3.60)	15.60 (3.82)	16.62 (3.26)	1.11	NA	.12
PR: Detachment	6.58 (3.30)	4.69 (2.96)	7.44 (3.31)	4.47 (3.16)	10.55 [†]	O,O+G>C	.34
FES: Conflict	3.55 (1.32)	3.12 (1.36)	4.00 (1.39)	3.08 (1.24)	4.72 ^{**}	O+G>G,C	.24
Locke-Wallace	1.35 (0.45)	1.27 (0.36)	1.62 (0.31)	1.21 (0.28)	4.85 ^{**}	O+G>C	.24
Child Sensation-seeking	13.39 (4.73)	11.13 (4.29)	12.77 (4.88)	12.58 (4.50)	1.14	NA	.12
Teacher Reports							
CSI-4 Symptom ratings							
ADHD:C	31.31 (11.89)	35.72 (12.2)	27.15 (13.03)	29.92 (11.9)	1.88	NA	.15
ODD	8.62 (6.33)	8.75 (6.31)	9.27 (6.81)	5.78 (5.83)	4.97 ^{**}	O,G,O+G>C	.24
Conduct Disorder	2.51 (2.75)	1.97 (2.71)	2.94 (3.83)	1.38 (2.58)	3.82 [*]	O,O+G>C	.21
GAD	6.17 (3.88)	8.81 (5.18)	6.27 (3.95)	5.67 (3.70)	3.14 [*]	G>C	.19
MDD	3.64 (3.04)	4.62 (3.44)	4.62 (3.43)	3.05 (2.79)	2.99 [*]	NA	.19
TRF Social Problems	5.22 (3.81)	7.31 (4.88)	5.32 (4.21)	4.81 (3.78)	1.98	NA	.16
TRF Academic Perf.	2.57 (0.89)	2.66 (0.84)	2.71 (0.68)	2.48 (0.74)	0.73	NA	.10

Note. O = mother-rated oppositional defiant disorder (ODD) group; G = mother-rated generalized anxiety disorder (GAD) group; O+G = mother-rated ODD+GAD group; C = Comparison group; $F = F$ for main effect of symptom group; post hoc comparison = Scheffé test; effect size = η^2 ; CSI-4 = Child Symptom Inventory-4; ADHD:C = attention-deficit/hyperactivity disorder, Combined Type; MDD = major depressive disorder; CBCL = Child Behavior Checklist; PR = Parents' Report; FES = Family Environment Scale; TRF = Teacher Report Form; perf. = performance; NA = not applicable.

^a $n = 72$.

^b $n = 16$.

* $p < .05$

** $p < .01$

*** $p < .001$

[†] $p < .0001$

TABLE 2

Means (SD) and Comparison Statistics for Teacher-Rated ODD and GAD Symptom Groups

Variable	ODD/T ^a	GAD/T ^b	ODD/T+GAD/T ^c	Comparison ^d	F(3, 239)	Post Hoc	Effect Size
Mother Reports							
CSI-4 Symptom ratings							
ADHD:C	32.60 (9.87)	33.08 (12.4)	30.81 (9.30)	31.97 (12.2)	0.20	NA	.05
ODD	12.82 (5.01)	11.00 (7.30)	10.62 (5.16)	9.84 (6.10)	2.54	NA	.18
Conduct Disorder	3.37 (3.39)	1.06 (1.67)	4.08 (4.51)	1.55 (2.59)	6.82 [†]	O,O+G>G,C	.28
GAD	6.75 (4.27)	8.20 (3.65)	8.13 (4.93)	6.61 (3.97)	0.96	NA	.11
MDD	5.27 (2.97)	5.77 (2.91)	6.98 (4.10)	4.52 (2.96)	2.10	NA	.16
CBCL Social Problems	5.05 (2.56)	3.72 (1.87)	5.15 (2.85)	4.01 (2.73)	2.32	NA	.17
PR: Control	8.62 (4.31)	7.56 (4.22)	7.00 (5.08)	6.40 (4.23)	2.91 [*]	O>C	.19
PR: Consistency	16.51 (3.19)	16.56 (3.26)	17.08 (3.25)	16.24 (3.45)	0.27	NA	.06
PR: Detachment	6.28 (3.64)	6.11 (3.85)	5.00 (2.38)	5.18 (3.33)	1.48	NA	.14
FES: Conflict	3.58 (1.29)	3.17 (1.47)	3.77 (0.93)	3.24 (1.33)	1.17	NA	.12
Locke-Wallace	1.27 (0.27)	1.42 (0.36)	1.74 (0.43)	1.26 (0.36)	3.99 ^{**}	O+G>O,C	.22
Child Sensation-seeking	14.95 (4.61)	12.63 (3.71)	14.23 (4.71)	12.15 (4.53)	4.45 ^{***}	O>C	.23
Teacher Reports							
CSI-4 Symptom ratings							
ADHD:C	36.01 (11.2)	37.22 (12.7)	40.27 (8.33)	27.71 (11.4)	9.79 [†]	O,G,O+G>C	.33
ODD	16.23 (3.44)	5.44 (3.93)	18.23 (4.97)	4.50 (3.75)	138.04 [†]	O,O+G>G,C	.80
Conduct Disorder	5.48 (3.65)	1.08 (1.59)	4.54 (3.81)	1.01 (1.70)	47.12 [†]	O,O+G>G,C	.61
GAD	6.45 (3.12)	13.86	13.23 (2.34)	4.66 (2.50)	98.42 [†]	G,O+G>O>C	.74
MDD	4.72 (3.55)	7.11 (4.42)	7.31 (3.68)	2.56 (1.86)	30.56 [†]	G,O+G>O>C	.53
TRF Social Problems	7.53 (4.42)	7.61 (4.43)	10.23 (4.46)	3.99 (3.00)	23.42 [†]	O,G,O+G>C	.48
TRF Academic Perf.	2.73 (0.88)	2.41 (0.68)	2.47 (0.77)	2.52 (0.77)	0.89	NA	.11

Note. O = teacher-rated oppositional defiant disorder (ODD) group; G = teacher-rated generalized anxiety disorder (GAD) group; O+G = teacher-rated ODD+GAD group; C = Comparison group; $F = F$ for main effect of symptom group; post-hoc comparison = Scheffé test; effect size = η^2 ; CSI-4 = Child Symptom Inventory-4; ADHD:C = attention-deficit/hyperactivity disorder, Combined Type; MDD = major depressive disorder; CBCL = Child Behavior Checklist; PR = Parents' Report; FES = Family Environment Scale; TRF = Teacher Report Form; perf. = performance; NA = not applicable.

^a $n = 39$.

^b $n = 18$.

^c $n = 13$.

^d $n = 173$.

^{*} $p < .05$;

^{**} $p < .01$;

^{***} $p < .001$;

[†]
 $p < .0001.$

TABLE 3

Means (SD) and Comparison Statistics for Mother-Rated ODD and Teacher-Rated GAD Symptom Groups

Variable	ODD/M ^a	GAD/T ^b	ODD/M+GAD/T ^c	Comparison ^d	F(3, 239)	Post Hoc	Effect Size
Mother Reports							
CSI-4 Symptom ratings							
ADHD:C	37.28 (9.84)	29.53 (13.2)	35.29 (7.01)	28.68 (11.8)	10.28 [†]	O>C	.34
ODD	16.38 (3.90)	6.35 (3.39)	16.29 (4.68)	6.46 (3.29)	143.95 [†]	O,O+G>G,C	.80
Conduct Disorder	3.36 (3.26)	0.78 (2.20)	4.20 (3.86)	0.92 (2.01)	18.37 [†]	O,O+G>G,C	.43
GAD	8.67 (4.22)	7.96 (4.94)	8.43 (3.10)	5.30 (3.27)	14.43 [†]	O,O+G>C	.39
MDD	6.40 (3.23)	5.10 (3.66)	7.71 (2.63)	3.51 (2.13)	22.44 [†]	O,O+G>C	.47
CBCL Social Problems	5.11 (2.70)	4.06 (2.30)	4.64 (2.56)	3.61 (2.58)	5.77 ^{***}	O>C	.26
PR: Control	7.48 (4.58)	6.29 (3.84)	8.57 (5.11)	6.38 (4.10)	1.82	NA	.15
PR: Consistency	15.81 (3.45)	17.06 (2.93)	16.43 (3.61)	16.60 (3.34)	1.36	NA	.13
PR: Detachment	6.81 (3.21)	4.71 (2.39)	6.79 (3.96)	4.46 (3.22)	10.41 [†]	O>C	.34
FES: Conflict	3.69 (1.40)	3.29 (1.49)	3.57 (1.02)	3.06 (1.22)	3.97 ^{**}	O>C	.22
Locke-Wallace	1.36 (0.40)	1.38 (0.29)	1.87 (0.43)	1.20 (0.29)	8.01 [†]	O+G>O,G,C	.30
Child Sensation-seeking	13.07 (4.92)	12.62 (4.62)	14.14 (3.59)	12.40 (4.49)	0.69	NA	.09
Teacher reports							
CSI-4 Symptom ratings							
ADHD:C	28.72 (12.0)	37.97 (11.7)	39.14 (10.6)	29.57 (11.8)	4.91 ^{**}	O+G>O,C;G>O	.24
ODD	8.43 (6.15)	10.65 (7.90)	11.00 (7.82)	5.50 (5.38)	6.51 [†]	O,G,O+G>C	.28
Conduct Disorder	2.56 (3.06)	2.15 (2.99)	1.92 (2.84)	1.35 (2.49)	3.11 [*]	O>C	.19
GAD	5.12 (2.92)	14.41 (2.57)	12.61 (2.47)	4.91 (2.56)	89.70 [†]	G,O+G>O,C	.73
MDD	3.37 (2.61)	7.29 (4.00)	7.07 (4.29)	2.69 (2.24)	23.09 [†]	G,O+G>O,C	.48
TRF Social Problems	4.86 (3.71)	9.65 (4.66)	7.57 (4.33)	4.48 (3.47)	10.32 [†]	G,O+G>C;G>O	.34
TRF Academic Perf.	2.63 (0.85)	2.41 (0.72)	2.46 (0.72)	2.52 (0.75)	0.58	NA	.09

Note. O = mother-rated ODD group; G = teacher-rated GAD group; O+G = mother-rated ODD+teacher-rated GAD group; C = Comparison group; F = F for main effect of symptom group; post-hoc comparison = Scheffé test; effect size = eta; CSI-4 = Child Symptom Inventory-4; ADHD:C = Attention-Deficit/Hyperactivity Disorder, Combined Type; MDD = Major Depressive Disorder; CBCL = Child Behavior Checklist; PR = Parents' Report; FES = Family Environment Scale; TRF = Teacher Report Form; perf. = performance; NA = not applicable.

^a
n = 84;

^b
n = 17.

^c
n = 14.

^d
n = 128.

*
p < .05;

**
p < .01;

p < .001;

[†]
 $p < .0001.$

TABLE 4

Means (SD) and Comparison Statistics for Teacher-Rated ODD and Mother-Rated GAD Symptom Groups

Variable	ODD/T ^a	GAD/M ^b	ODD/T+GAD/ M ^c	Comparison ^d	F(3, 239)	Post Hoc	Effect Size
Mother Reports							
CSI-4 Symptom ratings							
ADHD:C	31.20 (9.99)	40.28 (11.1)	35.33 (8.08)	30.55 (11.8)	6.71 [†]	G>O,C	.28
ODD	11.35 (4.03)	13.77 (6.08)	15.33 (7.01)	9.24 (5.99)	8.82 [†]	G,O+G>C	.32
Conduct Disorder	2.93 (3.33)	2.70 (3.39)	5.58 (4.16)	1.28 (2.26)	12.81 [†]	O+G>O,G>C	.37
GAD	5.32 (3.01)	12.91 (2.46)	13.03 (3.05)	5.61 (3.02)	72.43 [†]	G,O+G>O,C	.69
MDD	4.73 (2.86)	6.72 (3.39)	8.92 (2.74)	4.25 (2.73)	14.98 [†]	G,O+G>O,C	.40
CBCL Social Problems	4.55 (2.47)	5.20 (2.43)	6.83 (2.37)	3.76 (2.65)	7.49 [†]	O+G>O,C	.29
PR: Control	7.70 (4.16)	5.93 (4.28)	9.92 (5.38)	6.61 (4.23)	3.18 [*]	O+G>G	.20
PR: Consistency	16.68 (3.24)	15.93 (4.01)	16.58 (3.15)	16.33 (3.32)	0.29	NA	.06
PR: Detachment	5.45 (3.16)	5.83 (3.20)	7.67 (3.73)	5.17 (3.42)	2.22	NA	.16
FES: Conflict	3.38 (1.18)	3.37 (1.50)	4.42 (0.90)	3.21 (1.31)	3.24 [*]	O+G>C	.20
Locke-Wallace	1.26 (0.26)	1.32 (0.20)	1.78 (0.39)	1.26 (0.37)	4.27 ^{**}	O+G>O,G,C	.23
Child Sensation-seeking	15.02 (4.51)	11.45 (4.44)	13.92 (4.98)	12.33 (4.46)	4.96 ^{**}	O>G,C	.24
Teacher reports							
CSI-4 symptom ratings							
ADHD:C	37.71 (10.3)	28.60 (13.4)	34.96 (12.2)	28.61 (11.6)	7.39 [†]	O>G,C	.29
ODD	16.58 (4.09)	5.80 (4.18)	17.25 (3.41)	4.37 (3.66)	141.27 [†]	O,O+G>G,C	.80
Conduct Disorder	5.10 (3.71)	1.31 (2.44)	5.71 (3.66)	0.96 (1.50)	48.16 [†]	O,O+G>G,C	.61
GAD	8.04 (4.17)	6.73 (4.64)	8.50 (4.32)	5.31 (3.46)	7.74 [†]	O,O+G>C	.30
MDD	5.00 (3.67)	3.83 (2.93)	6.58 (3.80)	2.83 (2.49)	11.56 [†]	O+G>G,C; O>C	.36
TRF Social Problems	8.15 (4.58)	5.23 (4.26)	8.45 (4.61)	4.16 (3.10)	16.33 [†]	O,O+G>G,C	.41
TRF Academic Perf.	2.56 (0.85)	2.58 (0.69)	2.98 (0.80)	2.50 (0.78)	1.35	NA	.13

Note. O = teacher-rated ODD group; G = mother-rated GAD group; O+G = teacher-rated ODD+mother-rated GAD group; C = Comparison group; $F = F$ for main effect of symptom group; post-hoc comparison = Scheffé test; effect size = η^2 ; CSI-4 = Child Symptom Inventory-4; ADHD:C = Attention-Deficit/Hyperactivity Disorder, Combined Type; MDD = Major Depressive Disorder; CBCL = Child Behavior Checklist; PR = Parents' Report; FES = Family Environment Scale; TRF = Teacher Report Form; perf. = performance; NA = not applicable.

^a
 $n = 40$.

^b
 $n = 30$.

^c
 $n = 12$.

^d
 $n = 161$.

^{*}
 $p < .05$;

^{**}
 $p < .01$;

 $p < .001$;

†
 $p < .0001$.