

# Gender Appropriateness of Symptom Criteria for Attention-Deficit/Hyperactivity Disorder, Oppositional-Defiant Disorder, and Conduct Disorder

Jeneva L. Ohan, PhD  
Charlotte Johnston, PhD

*University of British Columbia*

**ABSTRACT:** We examined the gender appropriateness of the DSM-IV symptoms of attention-deficit/hyperactivity disorder (ADHD), oppositional defiant disorder (ODD), and conduct disorder (CD). In Study 1, 100 mothers (35 of children with and 65 of children without ADHD) rated how gender-typical and problematic they saw DSM-IV symptoms of ADHD, ODD, and CD; feminine descriptions of ADHD, ODD, and CD behaviors that we created; and relationally and overtly aggressive behaviors. Mothers rated the DSM-IV symptoms and overt aggression as boy-descriptive, and the feminine items that we created and relational aggression as girl-descriptive. Mothers saw the feminine items as less problematic than the masculine items. In Study 2, for 80 girls (40 with and 40 without ADHD), mothers' ratings on the feminine items were related to the corresponding DSM-IV symptoms, and to general psychopathology and impairment. Most correlations were significant and support the construct validity of the feminine items.

**KEY WORDS:** ADHD; oppositional-defiant disorder; conduct disorder; gender.

In the current Diagnostic and Statistical Manual of Mental Disorders, three of the most common and often co-occurring disorders of childhood and adolescence are the attention-deficit and disruptive behavior disorders: (1) attention-deficit/hyperactivity disorder (ADHD), (2) oppositional-defiant disorder (ODD), and (3) conduct disorder (CD).<sup>1</sup> Interest in these disorders is easily justified by the

---

We would like to thank the B.C. Health Research Foundation and the Medical Research Council of Canada for funding this project through studentship grants to the first author. We would also like to thank our participants and Katherine McKenney for their help.

Address correspondence to Charlotte Johnston, 2136 West Mall, Psychology Department, University of British Columbia, Vancouver, BC, V6T 1Z4, Canada. e-mail: jlohan@unimelb.edu.au

serious concurrent and future impairments of children so affected.<sup>2</sup> Certainly, the risks associated with these disorders make early and accurate diagnosis imperative for all children.

The DSM-IV symptom criteria for ADHD, ODD, and CD were developed and validated using samples composed primarily of school-aged boys.<sup>3,4</sup> Recently, questions have arisen regarding the appropriateness of using these criteria for diagnosing girls. In fact, researchers and clinicians have been increasingly voicing concerns that the ADHD, ODD, and CD symptom criteria in the DSM inadequately represent how girls manifest the core pathology of these disorders.<sup>5-14</sup> The basis of this argument is that the expression of these disorders may differ between boys and girls despite the presence of the same underlying pathology. For example, when considering how girls and boys express defiance, which is central to the conceptualization of ODD, it is possible that girls are more likely to defy passively (e.g., by ignoring and neglecting to do what has been asked), in contrast to boys who may be more likely to defy actively (e.g., by arguing vociferously). Of these two forms of defiance, only the more active type is represented in the DSM-IV ODD symptoms.

Research in childhood aggression provides a recent illustration of the importance of studying gender differences in symptom expression. Historically, the terms "physical violence" and "aggression" often have been considered synonymous. However, researchers have more recently emphasized other ways that children aggress. For example, Crick and Grotpeter hypothesized that boys are more likely to physically aggress or threaten (called overt aggression) because they value dominance and possessions, whereas girls are more likely to harm or disrupt the victim's relationships with others (called relational aggression) because they value group belongingness.<sup>15</sup> Importantly, when both relational and overt forms of aggression are measured, peers perceive girls and boys as equally aggressive.<sup>15</sup> Thus, girls are not necessarily less aggressive than boys, but they express aggression in different ways. This implies that using measures of aggression that focus solely on overt aggressive will markedly underestimate the number of girls identified as aggressive.

Following the example of childhood aggression research, we suggest that gender differences in the manifestations of ADHD, ODD, and CD may also exist, and that the DSM-IV symptom criteria for these disorders may not be adequately sensitive to the feminine expressions. For example, in the DSM-IV, all but one of the CD symptoms of "Aggression to people and animals" describe physical

violence.<sup>1</sup> Considering that girls are more likely to be relationally aggressive and boys more likely to be physically or overtly aggressive, these DSM symptoms may be more appropriate for describing CD in males.<sup>15</sup> Another example is the DSM-IV symptom criteria for ADHD, which tend to be achievement- and task- oriented (e.g., “often loses things necessary for tasks...,” “often does not follow through on instructions and fails to finish schoolwork...;”<sup>1</sup> values that are emphasized in boys’ play groups and perceived of as masculine.<sup>16–18</sup> On the other hand, few ADHD symptoms are interpersonally oriented (one exception might be “often talks excessively;” a value that is emphasized in girls’ play groups and perceived as “feminine”<sup>16–18</sup>). The implications of failing to consider differences in how girls and boys express ADHD, ODD, and CD are serious. Similar to aggression research, if gender differences in expression exist, girls with these disorders may be under-identified. This will inevitably result in under-diagnosis and in an underestimate of the true number of girls with these problems. Perhaps most sobering is that girls with these disorders who go unidentified are unlikely to access possibly beneficial treatments, and may become more severely afflicted over time.

To address the possibility that girls may exhibit ADHD, ODD, and/or CD in ways that differ from the DSM-IV symptom criteria, we conducted two studies. The first step in testing whether or not girls express ADHD, ODD, and CD symptoms differently than outlined in the DSM was to determine if the DSM criteria are indeed seen as more typical of boys than girls, and if there are behaviours that are seen as girl-typical that would still be consistent with the DSM concepts of these disorders. Thus, the purpose of Study 1 was to determine if mothers viewed the current DSM criteria for ADHD, ODD, and CD as more descriptive of how boys than girls express these problems, and if we could develop alternative descriptions that would be viewed as more descriptive of how girls display these problems. We chose mothers as participants because of the importance of their perceptions and opinions in every aspect of identifying and diagnosing children with these disorders. In fact, mothers are frequently relied upon as the most crucial, and at times only, source of information when making these diagnoses, whereas child reports and observations of child behavior are given less weight.<sup>19,20</sup>

Mothers were asked how gender-descriptive and problematic they viewed: (1) the DSM-IV symptoms of ADHD, ODD, and CD, (2) descriptions that we created to represent the same underlying problems in a more female-sensitive fashion, and (3) relationally and

overtly aggressive items. Mothers of children with and without ADHD participated in order to assess whether parenting experience with children who have attention-deficit and disruptive behavior problems influences mothers' perceptions of these problems. We included overtly and relationally aggressive items because of existing research that would provide us with a context in which we could view our results.<sup>21</sup> Given the aforementioned concerns that the DSM-IV criteria and overtly aggressive items describe boys' behaviour and were developed based largely on research with boys,<sup>5-14</sup> we hypothesized that mothers would see the DSM symptoms and overt aggression items as more boy-typical. Given that the behavior descriptions that we created and relational aggression items were created to describe girls' behaviour, we hypothesized that mothers would see these items as more girl-typical.

## Study 1

### *Methods*

*Participants.* Participants were 100 mothers of at least one child between 7 and 14 years of age, 65 of whom had a child without diagnosed ADHD (herein referred to as community mothers) and 35 of whom had a child diagnosed with ADHD by a qualified professional (medical doctor or psychologist). Advertisements were placed in the community (e.g., newsletters, libraries) and in ADHD centers (e.g., Ch.A.D.D. chapters, children's hospital). These advertisements asked for mothers interested in completing a questionnaire about challenging child behaviors to contact our laboratory. We did not use other measures to confirm the ADHD diagnoses for children in the ADHD group because the focus of this investigation was on mothers' opinions and beliefs about inattentive and disruptive behaviors, and not their ratings of their own child's actual behaviors. In addition, we were interested in how having a child who mothers believed had ADHD might influence these opinions, rather than the influence of actual child ADHD. However, we note that the same recruitment strategy was used in Study 2 and 40 of 42 participating children met criteria for ADHD. Community mothers had 0.98 daughters and 1.18 sons (mean child age, 9 years 10 months). Mothers of children with ADHD had 0.80 daughters and 1.60 sons (mean child age, 10 years 2 months). Thirty-six mothers in the ADHD group had at least one son with ADHD, and 10 had at least one daughter

with ADHD. The mean age of mothers was 39.78 years (community group, 39.41 years; ADHD group, 40.46 years). Mothers resided in a range of locations (urban, suburban, and semi-rural), and represented a range of ethnicities. The most common ethnicities were European-Caucasian (80% community group, 86% ADHD group), Asian (11% community, 6% ADHD), and East Indian (6% community, 3% ADHD). This is generally representative of the study location.

*Measure.* Mothers completed a questionnaire that included: (1) the DSM-IV symptoms of ADHD (18 items), ODD (8 items), and CD (15 items); (2) descriptions of behaviors that we created and hypothesized would be more descriptive of girls' behaviors (8 ADHD-, 7 ODD-, and 6 CD- like items; item creation described below); and (3) 11 items from Crick's<sup>21</sup> measure of relational and overt aggression (described below). All items are presented in Table 2.

For each item, mothers were asked to rate both the gender descriptiveness and the degree of problem the behavior caused on 9-point scales. The gender descriptiveness/typicality question was, "Is this behavior more typical of males or females?" with the anchors: very descriptive/typical of boys/males = 1; equally typical of both genders = 5; and very descriptive/typical of girls/females = 9. The degree of problem question was, "How much of a problem do you see this behavior?" with the anchors: not at all problematic = 1; somewhat problematic = 5; and very problematic = 9.

*Female-Sensitive Items.* In order to identify behaviors that would reflect girls' expressions of inattentive, hyperactive-impulsive, oppositional, and conduct problems, we reviewed behaviors suggested by past researchers' attempts in this area.<sup>13</sup> We also conducted individual open-ended interviews about how girls show these problems with 19 mothers of at least one daughter (ranging in age from 8 to 16 years) with ADHD and ODD or CD, and with 15 young females (ranging in age from 9 to 17 years) with ADHD and ODD or CD. In addition, we asked professionals in an ADHD outpatient clinic and in a group home for youth with conduct problems about the behaviors they have seen in girls that signify these disorders. Furthermore, we watched videotapes of play and task interactions between mothers and their daughters with ADHD. Finally, we used our own clinical and research experience to develop behavior descriptions that we believed described these disorders in girls. Thus, these items were rationally created to represent female-sensitive portrayals of ADHD, ODD, and CD behaviors.

Items from the Children's Social Behavior Scale-Teacher Form.<sup>21</sup> This scale is a widely used teacher-report measure of overt and relational aggression and has been used in research demonstrating gender differences in these forms of aggression.<sup>15</sup> We used the seven Relational and four Overt aggression items from this measure and asked mothers to rate these items on the same scales as described above, which have excellent internal reliability and evidence for concurrent and divergent validity.

*Procedure.* This study was approved by our university's ethics committee. Interested mothers were mailed the questionnaire along with a stamped envelope for return. Mothers were contacted 1 week later to ensure receipt of the questionnaire and to encourage its return. Questionnaires were returned by 70.20% of mothers. Participants were offered a copy of the study results.

### *Results*

#### *Group Differences Between Mothers of Children with and Without ADHD.*

*Demographics.* The demographics of community mothers and mothers of children with ADHD were compared using independent-samples *t*-tests on number of sons, number of daughters, mother age, and child age. Only the comparison of number of sons was significant, with community mothers having fewer sons than mothers of a child with ADHD ( $t(98) = 2.28, p < .05$ ; ADHD group mean = 1.18 (0.85), community group mean = 1.60 (0.91)).

*Rating Scales.* To explore whether or not experience rearing a child with a disruptive disorder influenced mothers' perceptions of the behavior descriptions, we conducted independent-samples *t*-tests. The dependent variables were created by averaging across items for ADHD, ODD, and CD, and for Overt and Relational aggression; thus, two scores (one for gender descriptiveness and one for degree of problem) were computed for each of the DSM disorders, for the ADHD-, ODD-, and CD- like Female-sensitive items, and for Overt and Relational aggression. None of the 16 comparisons were significantly different (all  $> .05$ ). In sum, experience parenting a child with ADHD did not impact mothers' ratings.

Because of a lack of group differences in questionnaire ratings and in the demographics (1 of the 20 total comparisons was significant), we considered the community and ADHD mothers as a single group

in ensuing analyses. As a note, we also conducted all of the analyses for the two groups of mothers separately and found the same pattern of results.

*DSM-IV criteria and Female-Sensitive Items.* To control for type 1 error, statistical tests were first organized into families based on the dependent variable being tested; thus, contrasts were organized into two families (gender ratings and problem ratings). A modified Bonferroni procedure recommended by Holms that maintains family-wise error rates at the desired alpha (type-1) error level (.05) was used.<sup>22</sup> In this method, the within-family tests are conducted, and their significance levels ( $p$  values) are ranked. The test with the smallest  $p$  value is evaluated for significance against the desired alpha level divided by the total number of tests in that family (i.e.,  $.05/k$ , where “ $k$ ” is the number of tests in that family). If the test is significant, then the contrast with the next smallest  $p$  value is evaluated against the desired alpha level divided by the number of remaining tests (i.e.,  $.05/[k-1]$ ), and so on (i.e.,  $.05/[k-2]$ , etc), until a test is deemed non-significant, after which all remaining tests are deemed non-significant.

*Gender Ratings.* To test our hypothesis that the DSM-IV criteria and Overt aggression items would be seen as more typical of boys/males and the Female-sensitive and Relational aggression items would be seen as more typical of girls/females, we conducted eight  $z$ -tests. Because gender-neutral was the null hypothesis, these tests were designed to assess the difference between the mothers' gender ratings and gender-neutrality (i.e., a rating of 5 on the 1 to 9 scale). Using Holm's procedure, all contrasts were significant ( $z$  (99)'s ranging from a low of  $-2.09$  for ODD DSM-IV symptoms to  $-20.78$  for CD DSM-IV symptoms; all  $p$ 's  $< .05$ ). Mothers perceived the DSM-IV symptoms and Overt aggression items as significantly male-descriptive and the Female-sensitive and Relational aggression items as significantly female-descriptive. Descriptive information and effect sizes are presented in Table 1.

Because we also were interested in how mothers perceived the gender descriptiveness of individual DSM and Female-sensitive items, we followed up with  $z$ -tests between mothers' ratings and gender-neutral ratings for these individual items. We did not use the Holm's procedure for these tests because they followed overall significant tests. The majority of contrasts were significant, the results of which, including effect sizes, are in Table 2.

**Table 1**

Descriptive Information and Effect Sizes for Gender Ratings for DSM-IV Symptom Criteria and Female-Sensitive Items in Study 1

<i>Items</i>	<i>Mean Rating</i>	<i>Standard Deviation</i>	<i>Effect size<sup>a</sup> (versus gender-neutral)</i>
DSM-IV ADHD	4.09	.75	-1.21
Female-sensitive ADHD	5.58	.63	0.92
DSM-IV ODD	4.87	.64	-0.21
Female-sensitive ODD	5.81	.79	1.03
DSM-IV CD	3.51	.72	-2.07
Female-sensitive CD	5.83	.73	1.14
Overt Aggression	3.10	.97	-1.95
Relational Aggression	6.54	.35	1.53

*Note.* Ratings are on a 1 (*very typical/descriptive of boys/males*) to 9 (*very typical of girls/females*) scale, with a rating of 5 being gender-neutral. All mean ratings are significantly different from gender-neutral.

<sup>a</sup>Effect sizes are in standard deviation (*z*-score) units.

*Problem Ratings.* Paired-samples *t*-tests compared mothers' averaged problem ratings of the DSM-IV versus Female-sensitive items, and the Overt aggression versus Relational aggression items. Mothers saw the DSM-IV symptoms as significantly more of a problem than the Female-sensitive items, (for ADHD:  $t(99) = 5.71$ ,  $p < .01$ , effect size = .37 SD; mean DSM = 5.86 (1.21), mean Female-sensitive = 5.41 (1.24); for ODD:  $t(99) = 5.24$ ,  $p < .01$ , effect size = .31 SD; mean DSM = 6.57 (1.25), mean Female-sensitive = 6.17 (1.32); and for CD:  $t(99) = 9.31$ ,  $p$ 's < .01, effect size = .47 SD; mean DSM = 8.05 (1.27), mean Female-sensitive = 7.44 (1.34)). Similarly, mothers rated Overt aggression as more problematic than Relational aggression,  $t(99) = 10.96$ ,  $p < .001$ ; Overt mean = 7.47 (1.46); Relational mean = 6.31 (1.36).

### *Discussion*

These results support the hypothesis that mothers of children with and without ADHD perceive the DSM-IV symptom criteria for ADHD, ODD, and CD, on average, as being descriptive of boys. This lends credence to concerns that the current DSM symptom criteria are most characteristic of how these disorders appear in boys,<sup>5-14</sup> at least in mothers' views. Moreover, the items that we created to represent female manifestations of ADHD, ODD, and CD were indeed seen as more descriptive of girls, which supports the

**Table 2**  
 Mean Gender Ratings for DSM-IV Symptom Criteria and the Female-Sensitive Items in Study 1

<i>Item</i>	<i>Gender Ratings</i>		<i>Effect Size</i>
	<i>Mean (SD)</i>		<i>(in SD's)</i>
<i>ADHD DSM-IV Criteria</i>			
Runs about or climbs excessively in situations in which it is inappropriate.	3.01 (1.29)		-1.54 <sup>a</sup>
“On the go” or acts as if driven by a motor.	3.46 (1.46)		-1.05 <sup>a</sup>
Has difficulty playing or engaging in leisure activities quietly.	3.64 (1.36)		-1.01 <sup>a</sup>
Leaves seat in classroom or in other situations in which remaining seated is expected.	3.56 (1.45)		-.99 <sup>a</sup>
Has difficulty sustaining attention in tasks or play activities.	3.85 (1.23)		-.91 <sup>a</sup>
Fidgets with hands or feet or squirms in seat.	3.76 (1.36)		-.91 <sup>a</sup>
Easily distracted by extraneous stimuli.	3.73 (1.46)		-.87 <sup>a</sup>
Loses things necessary for tasks or activities.	4.06 (1.19)		-.79 <sup>a</sup>
Has difficulty organizing tasks and activities.	4.12 (1.12)		-.78 <sup>a</sup>
Fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities.	4.02 (1.29)		-.76 <sup>a</sup>
Has difficulty awaiting turn.	4.10 (1.26)		-.71 <sup>a</sup>
Does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).	4.18 (1.17)		-.70 <sup>a</sup>
Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort.	4.19 (1.29)		-.68 <sup>a</sup>
Forgetful in daily activities.	4.19 (1.30)		-.62 <sup>a</sup>
Does not seem to listen when spoken to directly.	4.39 (1.05)		-.58 <sup>a</sup>
Blurts out answers before questions have been completed.	4.74 (1.28)		-.20
Interrupts or intrudes on others.	4.75 (1.31)		-.19
Talks excessively.	5.94 (1.53)		.61 <sup>a</sup>
<i>Female-sensitive items for ADHD</i>			
Giggles and/or talks excessively.	6.93 (1.43)		1.35 <sup>a</sup>
Writes or passes notes instead of completing classwork.	6.28 (1.25)		1.03 <sup>a</sup>
Blurts out things to others without thinking.	5.68 (1.48)		.46 <sup>a</sup>

**Table 2**  
Continued

<i>Item</i>	<i>Gender Ratings</i>	<i>Effect Size</i>
	<i>Mean (SD)</i>	<i>(in SD's)</i>
Changes friends impulsively or without thinking.	5.49 (1.32)	.37 <sup>a</sup>
Impulsively changes conversation topics.	5.33 (1.30)	.25 <sup>a</sup>
Whispers or talks to peers during class-time instead of paying attention to work.	5.29 (1.22)	.24 <sup>a</sup>
Doodles instead of completing classwork.	4.81 (1.19)	-.16
Forgetful in social activities (e.g., forgets/is late to meet friends).	4.80 (.98)	-.21
<i>ODD DSM-IV Criteria</i>		
Actively defies or refuses to comply with adults' requests or rules.	4.32 (1.14)	-.59 <sup>a</sup>
Deliberately annoys people.	4.30 (1.35)	-.51 <sup>a</sup>
Loses temper.	4.43 (1.35)	-.42 <sup>a</sup>
Argues with adults.	4.75 (1.04)	-.24 <sup>a</sup>
Blames others for his or her mistakes or misbehavior.	4.78 (1.12)	-.20
Angry and resentful.	4.88 (1.29)	-.09
Touchy or easily annoyed by others.	5.58 (1.34)	.43 <sup>a</sup>
Spiteful or vindictive.	5.95 (1.40)	.68 <sup>a</sup>
<i>Female-Sensitive Items for ODD</i>		
Catty and mean.	6.59 (1.39)	1.14 <sup>a</sup>
When mad, often glares, rolls eyes, or tosses head.	6.52 (1.47)	1.03 <sup>a</sup>
Gives others the "silent treatment" when angry.	5.91 (1.60)	.57 <sup>a</sup>
Cries or whines to get out of a task.	5.76 (1.43)	.52 <sup>a</sup>
Bitter and holds a grudge.	5.58 (1.31)	.44 <sup>a</sup>
Passively defies or refuses to comply with adults' requests or rules.	5.38 (1.40)	.27 <sup>a</sup>
Sneaky when trying to get out of trouble for own mistakes.	5.00 (1.27)	0
<i>CD DSM-IV Criteria</i>		
Has forced someone into sexual activity.	2.13 (1.23)	-2.33 <sup>a</sup>
Initiates physical fights.	2.44 (1.18)	-2.17 <sup>a</sup>
Has broken into someone else's house, building, or car.	2.65 (1.19)	-1.98 <sup>a</sup>
Has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun).	2.61 (1.29)	-1.85 <sup>a</sup>
Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).	2.76 (1.46)	-1.54 <sup>a</sup>
Has been physically cruel to animals.	2.96 (1.33)	-1.53 <sup>a</sup>

**Table 2**  
Continued

<i>Item</i>	<i>Gender Ratings</i>		<i>Effect Size</i>
	<i>Mean (SD)</i>		<i>(in SD's)</i>
Has deliberately engaged in fire setting with the intention of causing serious damage.	2.93 (1.36)		-1.52 <sup>a</sup>
Has been physically cruel to people.	3.17 (1.33)		-1.38 <sup>a</sup>
Has deliberately destroyed others' property (other than by fire-setting).	3.40 (1.34)		-1.19 <sup>a</sup>
Bullies, threatens, or intimidates others.	3.39 (1.39)		-1.16 <sup>a</sup>
Truant from school, beginning before age 13 years.	4.28 (1.14)		-.63 <sup>a</sup>
Often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others).	4.60 (1.24)		-.33 <sup>a</sup>
Often stays out at night despite parental prohibitions, beginning before age 13 years.	4.66 (1.22)		-.28 <sup>a</sup>
Has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery).	5.17 (1.16)		.15
Has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period).	5.47 (1.24)		.38 <sup>a</sup>
<i>Female-Sensitive Items for CD</i>			
Emotionally blackmails or bullies others.	6.39 (1.23)		1.13 <sup>a</sup>
Deliberately tells lies or discloses others' secrets in order to cause social damage or embarrassment.	6.45 (1.42)		1.02 <sup>a</sup>
Participates in a social group that is cruel to others.	5.96 (1.70)		.57 <sup>a</sup>
Leaves school during school hours with someone of the opposite sex.	5.63 (1.34)		.47 <sup>a</sup>
Is emotionally cruel to others (e.g., says defamatory things).	5.59 (1.32)		.44 <sup>a</sup>
Has taken things of nontrivial value from behind others' backs.	5.00 (.85)		-.02

*Note.* Means of gender ratings are based on mothers' responses on a 1 (*very* descriptive/typical of boys/males) to 9 (*very* descriptive/typical of girls/females) scale (a rating of 5 is equally descriptive of both genders). Effect sizes are for contrasts between the mean rating for each item and a gender-neutral rating.

<sup>a</sup>Contrasts are significant at the .05 level.

hypothesis that not all behaviors representative of ADHD, ODD, and CD are seen as male-typical. Also of note, not all of the DSM-IV symptoms were seen as male-typical. For example, consistent with our expectations, mothers saw the interpersonally oriented DSM ADHD symptom (i.e., "talks excessively") as descriptive of girls.

We acknowledge that mothers' perceptions of these behaviors as being descriptive of boys or girls do not imply true gender differences in these behaviors. For example, it is possible that their perceptions are a result of gender stereotypes. However, it is interesting that mothers' perceptions of the Relational aggression items as female-typical and the Overt aggression items as male-typical are consistent with research that has found actual gender differences in these behaviors.<sup>21</sup> Similar links to actual behavioral differences emerge in mothers' perceptions at the level of individual items. For example, the CD symptom that mothers saw as being gender neutral (i.e., has stolen items of nontrivial value) and the lone CD symptom mothers saw as significantly female-typical (i.e., has run away) have been recognized as important in the expression of CD in females.<sup>14,23</sup> However, regardless of whether or not boys and girls differ in these behaviors on observational measures, it is crucial that we recognize the importance of mothers' perceptions. In clinical contexts, mental health professionals commonly rely on parents' interviews and symptom checklist ratings as the primary, and at times only, source of information. Thus, it is possible that mothers may rate the DSM-IV symptoms as not being descriptive of their daughters' behavior even though their daughters may be experiencing the underlying problem represented by these disorders.

Interestingly, the DSM-IV symptoms were rated, on average, as more problematic than were the Female-sensitive items, although the effect sizes were small to medium. Again, it is important to acknowledge that the problem ratings are mothers' perceptions, and thus do not necessarily imply that the Female-sensitive items actually indicate less pathology. For example, even larger differences in the averaged problem ratings between Overt and Relational aggression items were found, yet there is strong evidence that relational and overt aggression are both associated with measures of psychopathology and peer problems.<sup>21</sup>

Nonetheless, we acknowledge the possibility that the items we created are not as indicative of impairment as the DSM-IV symptom criteria. We also recognize that it is possible that the items that we created may not overlap with the DSM-IV symptom criteria for these disorders. To address these concerns, we conducted a second study that examined the construct validity of the Female-sensitive items in girls. We explored the relationships between the DSM-IV symptoms and the Female-sensitive items, as well as between these sets of symptoms and indices of psychopathology and impairment. Given our hypothesis that the items that we created tap

the same underlying construct as the DSM symptoms but differ in their gender manifestations, we hypothesized that the DSM and Female-sensitive items would be moderately correlated. In addition, we expected that both the Female-sensitive items and the DSM-IV symptoms would be related to behavior problems and impairment. Finally, we hypothesized that the DSM and the Female-sensitive items would be rated as significantly higher in girls with than without ADHD. Only girls were included given that the goal of this study was to examine the construct validity of these items for girls.

## Study 2

### *Methods*

*Participants.* Participants were 40 mothers of a daughter with ADHD (ADHD group) and 40 mothers of a daughter without a diagnosed mental health disorder (community group). All daughters were between 9- and 12-years of age. The same recruiting techniques as in Study 1 were used.

Of the 40 girls with ADHD, 17 were taking methylphenidate and 5 were taking dextroamphetamine. In Canada, short-acting stimulant medication is a common treatment for ADHD, and provides fast-acting, short-term effects. Mothers typically have ample opportunity to see their child's behavior off of medication. Mothers who indicated that their daughter was currently taking stimulant medication were asked to complete *all* measures describing the child's behavior *off* of medication.

There were two inclusion criteria for the ADHD group. The first was maternal report that the girl was diagnosed by a qualified health professional (12 girls were diagnosed by primary physicians, 11 by psychiatrists, 12 by psychologists, and 5 by pediatricians). The second criterion was maternal report that the child met the DSM-IV ADHD criteria. To determine whether the girls met symptom criteria, mothers rated their daughter's behavior over the past 6 months on the 18 symptoms of ADHD on the ADHD Rating Scale.<sup>24</sup> This scale asks mothers to rate the 18 symptoms of ADHD on a 4-point scale ranging from 0 ("never or rarely") to 3 ("very often"). Ratings above the mid-point were counted as a present symptom. Factor analyses of the ADHD Rating Scale IV are consistent with the theoretical structure of ADHD, and the subscales are internally reliable, stable, and externally valid.<sup>24</sup> Based on mothers' ratings, 18 girls met the predominantly inattentive subtype, and 22 met the

combined subtype. Finally, to ensure that girls met DSM-IV criteria for impairment and pervasiveness, mothers were asked how impaired their daughter was as a result of the ADHD symptoms (ratings above the mid-point on a 1 to 10 scale were required), and in how many situations their daughter expressed the ADHD symptoms (at least two were required). Mothers also completed ratings of their daughters on the symptoms of ODD and 17 of the girls with ADHD were rated as having at least 4 of the DSM-IV symptoms of ODD. Two girls were excluded because they met only five of the required six symptoms of ADHD.

In order to be included in the control group, mothers had to rate their daughters as having less than six symptoms on both subscales of the ADHD Rating Scale IV.<sup>24</sup> Exclusionary criteria for both groups included a pervasive developmental disorder (e.g., autism) or mental retardation.

The majority of participating mothers were married (30 of the ADHD group, 34 of the control group) and of middle socioeconomic status as measured by the Four Factor Index of Social Status (all classes represented in both groups).<sup>25</sup> The average age of community mothers was 38.72 years (mean age of daughter, 10 years, 8 months), and the average age of mothers of daughters with ADHD was 39.79 years (mean age of daughter, 10 years, 10 months). Maternal reported ethnicities included European-Caucasian (37 ADHD, 34 controls), Asian (1 ADHD, 3 control), Hispanic (1 ADHD, 2 control), and East Indian (1 ADHD, 1 control). This is generally representative of the study area.

### *Measures*

*DSM-IV ADHD, ODD, and CD symptoms.* In addition to the ratings of the DSM symptoms of ADHD on the ADHD Rating Scale IV, mothers also rated their daughters on DSM symptoms of ODD and CD, using the same 4-point format and instructions as the ADHD Rating Scale IV. Ratings were averaged for each disorder to yield ADHD, ODD, and CD symptom severity scores. The internal consistencies for the ADHD and ODD symptom ratings were high for both groups (range .82 to .90). The CD items could not be adequately examined. Near the beginning of the study, several mothers strongly objected to the content of the CD items. As a result, we removed the CD items from the questionnaire. Of the 11 mothers who did complete the CD items, their ratings indicated that these behaviors were generally not present in their daughters (for the 6 mothers of girls

with ADHD, mean = 0.03 (.01); for the 5 mothers of community girls, mean = 0.00 (.00)).

*Female-Sensitive Items.* Mothers were asked to rate their daughter's behavior over the past 6 months on the Female-sensitive ADHD, ODD, and CD items developed in Study 1. These were presented with the same instructions and 4-point scale as for the DSM items. Ratings were averaged for each diagnostic category to yield Female-sensitive ADHD, Female-sensitive ODD, and Female-sensitive CD severity scores. The internal consistencies of these scales were adequate for both ADHD and control mothers (range from .76 to .83).

*Child Behavior Checklist (CBCL).*<sup>26</sup> The CBCL problem scales contain 114 items that parents rate from never true (0) to often or always true (2) of their child. This widely-used measure has excellent norms, and strong evidence of reliability and validity.<sup>26</sup> For the purposes of this investigation, the total problem scale was used, as it reflects a broad array of problem behaviors that are known to indicate psychopathology in children.

*Children's Impairment Rating Scale (CIRS).*<sup>27</sup> The CIRS contains six items that reflect areas central to children's functioning (peers, teacher relations, classroom behavior, self-esteem, academic difficulties, and overall impairment). Each item is rated from 0 ("no problem, definitely does not need treatment or special services") to 6 ("extreme problem, definitely needs treatment or special services"). The CIRS has good test-retest reliability and concurrent and discriminant validity.<sup>27</sup> Items were summed into a single score reflecting total impairment (internal consistency of .80 in the ADHD group, and .92 in the control group).

## Results

*Demographic Group Differences.* Mothers in the community versus ADHD groups were compared using independent-samples *t*-tests for number of sons, number of daughters, mother age, child age, and socio-economic status. A Chi square test examined group differences in the frequency of married versus single mothers. No comparisons were significant.

*Correlations.* One-tailed Pearson correlation coefficients were conducted. The Holm's modified Bonferroni procedure was used to

control for family-wise type-1 error (described in Study 1). Thus, the significance of the first correlation was deemed significant if its  $p$  value was less than type-1 error (.05) divided by the total number of correlations per family; the second was deemed significant if its  $p$  value was less than type-1 error (.05) divided by the total number of correlations per family minus one, and so on. Tests are clustered into families as described below. We examined the correlations for each group of mothers separately because combining these groups would result in an artificial range inflation and thus overestimate the true degree of relation.

*Relationships between DSM-IV criteria and Female-sensitive items.* For the first family of tests, the DSM and Female-sensitive items were correlated (the DSM CD items were not examined because they had been removed from the questionnaire as noted above). The DSM-IV ADHD and ODD symptoms were significantly related to the Female-sensitive ADHD and ODD respectively for mothers in both groups (See Table 3).

For the second family of tests, we conducted cross-correlations between non-corresponding DSM-IV symptoms and Female-sensitive items (e.g., DSM-IV ADHD symptoms with Female-sensitive ODD items). Only the correlation between Female-sensitive ADHD items and DSM-IV ODD symptoms for the ADHD group was significant. To examine the differential validity of the Female-sensitive items, we conducted Fisher Z transformations and tested for differences in the size of correlations between corresponding and non-corresponding scales. All comparisons indicated that the corresponding correlations

**Table 3**  
Correlations and Cross-Correlations Between Female-Sensitive and DSM-IV ADHD and ODD items for ADHD and Community Girls in Study 2

	DSM-IV ADHD	DSM-IV ODD	Fisher Z test
<i>Girls with ADHD</i>			
Female-sensitive ADHD items	.50***	.25	1.26
Female-sensitive ODD items	.40**	.75***	2.32**
<i>Community Girls</i>			
Female-sensitive ADHD items	.62***	.27	1.93*
Female-sensitive ODD items	.22	.70***	2.75**

*Note.* Significance is denoted by \*at the .05 level; \*\*at the .01 level; and \*\*\*at the .005 level. Fisher Z tests compared within- to cross-disorder correlations.

were significantly larger than the non-corresponding correlations, with the exception of the Female-sensitive ADHD items with DSM-IV ODD symptoms in the ADHD group. See Table 3 for correlations and Fisher Z test results.

*Correlations of DSM-IV and Female-sensitive items with psychopathology and impairment.* Families of tests were organized by group (i.e., ADHD and community correlations separately). For mothers of girls with ADHD, higher levels of DSM-IV ADHD and ODD symptoms were significantly correlated with higher ratings on both the CBCL total problems and CIRS impairment scales. For the Female-sensitive Items, higher levels of ADHD, ODD, and CD items were significantly related to higher levels of both the CBCL total problems scale and impairment on the CIRS. Correlations are shown in Table 4.

For mothers of girls in the community group, higher DSM-IV ADHD ratings were significantly related to higher levels of problems on the CBCL and impairment on the CIRS. Ratings of the DSM-IV ODD criteria were related to impairment as assessed by the CBCL total problem, but not the CIRS, scale, suggesting that the DSM-IV ODD criteria were related only to general behavior maladjustment. As with the ADHD group, for the Female-sensitive items, all

**Table 4**  
Correlations for DSM-IV Symptoms and Female-Sensitive Items with Impairment and Psychopathology in Study 2

<i>Measure</i>	<i>DSM-IV Symptoms</i>		<i>Female-Sensitive Items</i>		
	<i>ADHD</i>	<i>ODD</i>	<i>ADHD</i>	<i>ODD</i>	<i>CD</i>
<i>Girls with ADHD</i>					
CBCL Total Problems	.41**	.65***	.46** (.58***)	.75*** (.63**)	.61***
CIRS Impairment	.52**	.60***	.44** (.48**)	.56*** (.25)	.69***
<i>Community Girls</i>					
CBCL Total Problems	.57***	.48**	.62*** (.38**)	.42** (.27)	.40**
CIRS Total Impairment	.34*	.16	.28* (.01)	.37* (.36*)	.41**

*Note.* Partial correlations, which appear in brackets, are with the corresponding DSM-IV symptoms controlled. Correlations denoted by + are a trend at the .10 level; \*are significant at the .05 level; \*\*are significant at the .01 level; \*\*\*are significant at the .001 level.

correlations between ratings on the ADHD, ODD and CD items and the CIRS and CBCL were significant. This suggests that, for the non-clinical sample of girls, mothers' perceptions of greater levels of the Female-sensitive ADHD, ODD and CD behaviors was associated with more maladaptive behavior and impairment in daily life. Correlations are in Table 4.

To test for differences in the magnitude of the correlations between DSM-IV symptoms and the measures of psychopathology and the correlations between Female-sensitive items and the same measure of psychopathology, we conducted Fisher Z transformation tests. All tests were non-significant, indicating that the DSM-IV and Female-Sensitive items were similarly related to measures of impairment and psychopathology.

*Partial Correlations.* We conducted partial correlations to test the unique contributions of the Female-sensitive items in predicting impairment and psychopathology after accounting for the corresponding DSM-IV symptoms. The Holm's procedure was used to determine significance. For the ADHD group, after controlling for DSM-IV ADHD symptoms, higher levels of Female-sensitive ADHD items remained related to higher levels of total problems on the CBCL and impairment on the CIRS. Similarly for the ADHD group, after controlling for DSM-IV ODD symptoms, higher levels of Female-sensitive ODD items were related to higher levels of total problems on the CBCL. For the community group, after controlling for the DSM-IV ADHD symptoms, higher levels of Female-sensitive ADHD items were related to higher levels of total problems on the CBCL but not to impairment on the CIRS. See Table 4 for partial correlations.

*Group differences on the Female-sensitive ADHD, ODD, and CD items.* We used independent-samples *t*-tests with Holm's family-wise error control to compare the community and ADHD groups on the Female-sensitive ADHD, ODD, and CD items. Because the groups were defined based on the presence versus absence of DSM-IV ADHD symptoms, and the DSM-IV ODD symptoms are highly related to DSM-IV ADHD symptoms, we did not conduct these tests for the DSM-IV criteria. Relative to girls without ADHD, mothers of girls with ADHD rated their daughters as showing significantly greater levels of the Female-sensitive ADHD items,  $t(58) = 12.33$ ,  $p < .001$ , effect size = 3.60 SDs; mean ADHD group = 1.97 (.058), mean community group = 0.44 (.27). A similar effect was seen for the

Female-sensitive ODD items,  $t(58) = 6.64$ ,  $p < .001$ , effect size = 1.56 SDs; mean ADHD group = 1.18 (.64), mean community group = .42 (.33); as well as the Female-sensitive CD items,  $t(58) = 5.23$ ,  $p < .01$ , effect size = 1.18 standard deviations; mean ADHD group = .61 (.41), mean community group = .23 (.18).

### *Discussion*

The primary aim of Study 2 was to determine if the Female-sensitive ADHD, ODD, and CD items created in Study 1 were related to DSM-IV symptoms in girls. To this end, our findings support the hypothesis that the Female-sensitive ADHD and ODD items are tapping constructs related to the respective DSM-IV disorders. The correlations between the DSM symptoms and the Female-sensitive items are similar in magnitude to what others have found when assessing gender manifestations of aggression.<sup>21</sup> Unfortunately, we were unable to assess the degree of relatedness between the Female-sensitive and DSM-IV CD items, as we removed these from the study subsequent to several mothers expressing objections to the content of some CD items (e.g., “has forced someone into sexual activity”). Although not possible to answer here, we believe that this question is an important one for future research with a more severely impaired sample of girls (e.g., incarcerated youth). We also note that mothers did not object to the Female-sensitive CD items.

The findings provide preliminary support for the differential validity of the Female-sensitive ADHD and ODD items. With the exception of the Female-sensitive ADHD items in the ADHD group, correlations were larger between corresponding than non-corresponding DSM-IV and Female-sensitive scales (e.g., ADHD with ADHD was larger than ADHD with ODD). Moreover, this is evidence that the correlations between the DSM-IV symptoms and Female-sensitive items were not a mere halo-effect of mothers rating their daughters highly on all problems. We also found support for the discriminant validity of the Female-sensitive items. Given that girls were recruited based on DSM-IV ADHD presence or absence, and given the substantial comorbidity of ADHD, ODD and CD, it was reasonable to expect these items to discriminate between groups. As anticipated, girls diagnosed with ADHD had higher levels of the Female-sensitive ADHD, ODD and CD items than did girls in the non-clinical control group.

A second purpose of this study was to determine if the Female-sensitive ADHD, ODD, and CD items were related to psychopathology

and impairment. This question was in part motivated in response to Study 1, which raised the possibility that differences in mothers' perceptions of severity between the DSM-IV and Female-sensitive items may reflect actual differences in maladjustment. Our Study 2 results suggest that the Female-sensitive items are indeed related to psychopathology and impairment in girls with and without ADHD. In addition, the Female-sensitive ADHD and ODD items generally accounted for variance in psychopathology and impairment over and above that accounted for by the DSM-IV symptoms, suggesting that these items may provide unique information about girls' functioning.

### General Discussion

We did not conduct these studies with the intention of re-defining the DSM-IV ADHD, ODD, and CD criteria. Rather, we intended to investigate the gender-descriptiveness of these criteria and other behavior descriptions that we created to represent feminine manifestations of the same underlying pathology. Our results confirmed our hypotheses; that is, mothers perceived the DSM-IV ADHD, ODD, and CD criteria as descriptive of boys. Moreover, we found that there are behaviour problems that represent the underlying concepts of these DSM-IV disorders that mothers perceive as being typical of girls. We also investigated if the items that we created to assess ADHD, ODD, and CD in a female-descriptive way would overlap with the corresponding DSM-IV constructs, and indicate psychopathology and impairment in girls. Again, our results largely confirmed our hypotheses: the Female-sensitive items were related to DSM-IV symptoms of ADHD and ODD, and were related to psychopathology and impairment.

Based on our findings, it is premature to argue that the DSM-IV symptoms for these disorders need to be changed. We are not proposing that two sets of criteria, one for each gender, need to be created,<sup>28</sup> nor are we advocating that additional disorders (e.g., ODD-active; ODD-passive) need to be created. However, these results do suggest that future research may need to consider these possibilities, and perhaps work toward including both male- and female-descriptive symptoms, provided that such items are sensitive and specific to the underlying conceptualization of the disorder and indicate impairment.

Despite the complications involved in broadening our operational definitions of ADHD, ODD, and CD, the potential consequences of

not appropriately identifying girls with these disorders outweigh the costs. One of the most likely ramifications of failing to identify these disorders in girls is that they will take longer to meet diagnostic criteria that do not adequately describe their symptoms; thus, girls may be more intractable and impaired by the time they reach mental health services. Many authors have noted that girls with ADHD, ODD, and CD appear to be more severely impaired than are boys with these disorders. For example, Sharpe et al. found that physicians rated girls with ADHD as more impaired than boys with ADHD on a global impairment scale.<sup>29</sup> In addition, Chamberlain found that treatments provided to adolescents with CD were markedly less successful for girls than boys.<sup>30</sup> Some have referred to such findings as the “gender paradox,” and have proposed genetic reasons for this difference.<sup>31</sup> However, the explanation that the symptoms that we are using to diagnose girls are not sufficiently sensitive to how girls express these disorders could also account for identification of only more severely afflicted females, and is an interesting hypothesis that we put forth as deserving consideration.

Our results have limitations. Firstly, as our interest was focused on girls and on the appropriateness of the DSM-IV criteria for capturing their impaired behavior, we did not include boys in Study 2 and thus we do not know how the Female-sensitive items relate to their corresponding DSM constructs or to general psychopathology and impairment in males. In addition, we do not know how the Female-sensitive items would apply to girls with ODD alone or with CD because the samples were comprised of girls with ADHD with and without comorbid ODD. Finally, our results apply to elementary-school aged girls. We included a limited age range because the prevalence and types of disruptive behavior problems change with age, and thus including disparate age groups may over-estimate the true degree of relationship between the Female-sensitive items and dependent variables (e.g., DSM symptoms). Certainly, future research is needed to address these questions.

### Summary

These studies support the contention that the DSM symptoms of ADHD, ODD, and CD are seen as typical of boys and that girls manifest attention-deficit and disruptive behaviors differently than these symptoms listed in DSM-IV. In addition, our results suggest that considering the alternative ways in which girls express symptoms of

ADHD, ODD, and CD is important in understanding their psychopathology and impairment in daily life, above and beyond the information provided by current DSM symptoms. Despite the limitations in the scope of this study, the results highlight the importance of considering possible gender differences in the manifestations of childhood attention and disruptive disorders in future research, as well as the possible role that parents' and clinicians' perceptions of gender appropriateness may play in diagnosing these disorders in girls.

### References

1. Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). 4th ed. Washington, DC: American Psychiatric Association, 1994.
2. Johnston C, Ohan JL: Externalizing disorders. In Ollendick TH, Silverman WK, (eds): *Developmental Issues in the Clinical Treatment of Children*. Needham Heights, MA: Allyn & Bacon, 1998, pp. 279–294.
3. Lahey BB, Applegate L, Barkley RA, Garfinkel B, McBurnett K, Kerdy L, et al: DSM-IV field trials for oppositional defiant disorder and conduct disorder in children and adolescents. *Am J Psychiatry*. 151: 1163–1171, 1994.
4. McBurnett K, Pfiffner LJ, Willcutt E, Tamm L, Lerner M, Loebig Ottolini Y: Experimental cross-validation of DSM-IV types of attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry* 38: 17–24, 1999.
5. Goodman SH, Kohlsdorf B: The developmental psychopathology of conduct problems: Gender issues. In D.C. Fowles, P. Sutker, S.H. Goodman, (eds): *Progress in experimental personality and psychopathology research: Special focus on psychopathy and antisocial personality: A developmental perspective*. New York: Springer Publishing Company, 1994, pp. 121–161.
6. Hartung CM, Widiger TA: Gender differences in the diagnosis of mental disorders: Conclusions and controversies of the DSM-IV. *Psychol Bull* 123: 260–278, 1998.
7. Ohan JL, Johnston C: Gender appropriateness of diagnostic criteria for the Externalizing Disorders. In Moretti M, chair. *Aggression in girls: Diagnostic issues and interpersonal factors*. Symposium conducted at the meeting of the Society for Research in Child Development; 1999 Apr Albuquerque, New Mexico.
8. Popper CW, Steingard RJ: Disorders usually first diagnosed in infancy, childhood, or adolescence. In Hales RW, Yudofsky SC, Talbott JA, (eds): *Textbook of Psychiatry* Washington, DC: American Psychiatric Press, pp. 701–728, 1994.
9. Quinn PO, Nadeau KG: *Gender issues and AD/HD: Research, diagnosis, and treatment*. Silver Spring, MD: Advantage Books, 2002.
10. Robins LN: Conduct disorder. *J Child Psychol Psychiatr* 32: 193–212, 1991.
11. Taylor EW, Keltner NL: Messy purse girls: Adult females with ADHD. *Perspect Psychiatr Care* 38: 69–72, 2002.
12. Webster-Stratton C: Early-onset conduct problems: Does gender make a difference? *J Consult Clin Psychol* 64: 540–551, 1996.
13. Zoccolillo, M: Gender and the development of conduct disorder. *Dev Psychopathol* 5: 65–78, 1993.
14. Zoccolillo M, Rogers K: Characteristics and outcome of hospitalized adolescent girls with conduct disorder. *J Am Acad Child Adolesc Psychiatry* 30: 973–981, 1991.

15. Crick NR, Grotpeter JK: Relational aggression, gender, and social-psychological adjustment. *Child Dev* 66: 710–722, 1995.
16. Martin CL: Stereotypes about children with traditional and nontraditional gender roles. *Sex Roles* 33: 727–751, 1995.
17. Holt CL, Ellis JB: Assessing the current validity of the Bem Sex-Role Inventory. 39: 929–941, 1998.
18. Maccoby EE: Gender and group process: A developmental perspective. *Curr Dir Psych Sci* 11: 54–58, 2002.
19. Barkley RA: Attention deficit hyperactivity disorders: A handbook for diagnosis and treatment. 2nd ed. New York: Guilford Press, 1998.
20. McMahon RJ, Estes AM: Conduct problems. In: Mash EJ, Terdal LG, (eds): *Assessment of childhood disorders*. New York: Guilford, pp. 130–196, 1997.
21. Crick NR: The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Dev* 67: 2317–2327, 1996.
22. Holm S: A simple sequentially rejective multiple test procedure. *J Stat.* 6: 65–70, 1979.
23. Robins LN: The consequences of conduct disorder in girls. In: Olweus D, Block J, Radke-Yarrow M, (eds): *Development of antisocial and prosocial behavior: Research, theories, and issues*. Orlando, Florida: Academic Press, 1986, pp. 385–414.
24. DuPaul GJ, Power TJ, Anastopoulos AD, Reid R: ADHD Rating Scale-IV: Checklist, norms, and clinical interpretation. New York: Guilford, 1998b.
25. Hollingshead AB: Four factor index of social status. New Haven, CN: Yale University Press, Department of Sociology, 1995
26. Achenbach TM: Manual for the Child Behavior Checklist/4–18 and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry, 1991.
27. Pelham WE, Gnagy EM, Waschbusch DA, Willoughby M, Palmer A, Whichard M, Hall S, Schaffer S, Meyers D, Billheimer S: A practical impairment scale for children disorders: Normative data and an application to ADHD. Poster presented at the International Society for Research in Child and Adolescent Psychopathology; 1996 Jan Santa Monica, California.
28. Zahn-Waxler, C: Warriors and worriers: Gender and psychopathology. *Dev Psychopathol* 5: 79–89, 1993.
29. Sharp WS, Walter JM, Marsh WL, Ritchie GF, Hamburger SD, Castellanos FX: ADHD in girls: Clinical comparability of a research sample. *J Am Acad Child Adolesc Psychiatry* 38: 40–47, 1999.
30. Chamberlain P: Effects of relationships on adolescent girls in contact with the law. In Gartner R, chair. *Girlhood aggression*. Symposium conducted at the second meeting of the Earls court Child and Family Center and La Marsh Center for research on violence and conflict resolution, 1999 Oct, Toronto, Ontario, Canada.
31. Eme RF: Selective female affliction in the developmental disorders of childhood: A literature review. *J Clin Child Psychol* 21: 354–364, 1992.