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Perrin, Sean; Last, Cynthia

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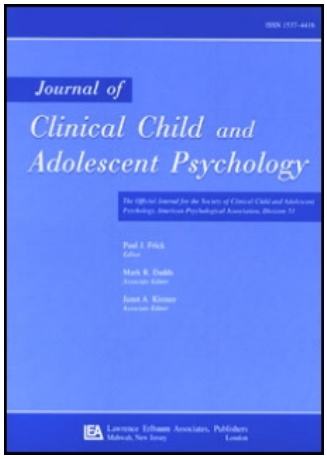

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Worrisome Thoughts in Children Clinically Referred for Anxiety Disorder

Sean Perrin and Cynthia G. Last
Center for Psychological Studies, Nova Southeastern University

Administered a 31-item worry measure, based on criteria from the Diagnostic and Statistical Manual of Mental Disorders (3rd ed., rev.; American Psychiatric Association, 1987) for anxiety disorders, to referred children with anxiety disorders (n = 72) or attention deficit hyperactivity disorder (ADHD; n = 50), and to nonreferred, never psychiatrically ill controls (n = 55). Anxiety and ADHD groups did not differ for self-reported worries. Anxious children did report more "intense" worries about separation and social evaluation than controls. ADHD children reported more intense worries about friends and school than controls. Separation worries were most prevalent in children with separation anxiety disorder, thus distinguishing this subgroup from both control groups. Results suggest that intense worries specific to one's anxiety disorder are more clinically relevant than the overall level of worry. Implications for assessment of worry are discussed.

The ability to anticipate future negative events is an important adaptive function that emerges between 2 and 4 years of age (Littenberg, Tulkin, & Kagan, 1971; Morris, Brown, & Halbert, 1977). With increased cognitive development, the child's ability to elaborate upon an event's consequences increases so that multiple negative outcomes may be considered (Vasey, Crnic, & Carter, 1994). As early as age 2, however, anticipation of negative outcomes has been associated with increased distress and arousal in the child (Kagan, 1981), and thus has been termed *worry*.

In the anxiety literature, *worries* are most often defined as maladaptive and intrusive thoughts involving potentially threatening or negative outcomes (Barlow, 1988). As part of the cognitive component of anxiety, they are thought to play an important role in the development and maintenance of anxiety disorder in both adults (Barlow, 1988; Beck & Emery, 1985; Borkovec, Shadick, & Hopkins, 1991; Mathews, 1990) and children (Kendall & Ingram, 1989; Silverman, La Greca, & Wasserstein, 1995; Vasey et al., 1994). In particular, excessive and intrusive worrying is a core component of the revised diagnostic criteria for both generalized anxiety disorder (GAD) in the fourth-edition *Diagnostic and Statistical Manual of Mental Disorders* (*DSM–IV;* American Psychiatric Association [APA], 1994) and overanxious disorder in the third and revised *DSM* (*DSM–III–R;* APA, 1987). In both the *DSM–III–R* and the *DSM–IV,* excessive worries about separation from a primary caregiver are cardinal symptoms of separation anxiety disorder (SAD).

Requests for reprints should be sent to Cynthia G. Last, Center for Psychological Studies, Nova Southeastern University, 3111 University Drive, Suite 307, Coral Springs, FL 33065.

Despite their importance to cognitive–behavioral models of anxiety and *DSM* criteria for anxiety disorder, very little research has been devoted to children's worries (Kendall & Chansky, 1991; Silverman et al., 1995; Vasey et al., 1994). Specifically, few studies have addressed the content or frequency of worries in samples of children diagnosed with anxiety disorder (Kendall & Chansky, 1991). Much of the available information is based on studies of nonreferred children and surveys conducted from 20 to 50 years ago (for a review, see Silverman et al., 1995). In one of the few current studies to address this issue directly, Silverman et al. (1995) examined the topography of childhood worries and their relationship to anxiety in a large sample ($N = 273$) of nonreferred children between 7 and 12 years of age. Overall, more than two thirds of the sample reported at least one worry, primarily those involving health, school performance, and personal harm. The most intense or frequent worries involved safety and personal injury, although the children were not selected from a school district known for its high crime rate. Based on self-report measures of anxiety, participants classified as "high-anxious" reported a significantly greater number of worries and areas of worry, as well as more frequent or intense worrying (Silverman et al., 1995).

These findings are consistent with earlier studies that found worries, particularly those about school, to be common in nonreferred children and adolescents (Brown, O'Keefe, Sanders, & Baker, 1986; Orton, 1982; Pitner & Lev, 1940). Also, they coincide with previous investigations that have found frequent or intense worries, particularly those involving performance, in roughly a third of nonreferred children (Bell-Dolan, Last, & Strauss, 1990). In all, the preceding literature supports the notion that children do worry,

and this worry may be related to increased anxiety in the child. However, studies of anxiety disordered children may shed more light on the clinical meaningfulness of children's worries.

The available literature on anxious cognition in anxiety-disordered children has focused primarily on fear (Kendall & Chansky, 1991). Further, no measure designed specifically to assess the worries associated with *DSM* criteria for anxiety disorder has been developed. Of the three most widely used measures of childhood fears and anxiety, the Revised Fear Survey Schedule for Children (FSSC–R; Ollendick, 1983), the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), and the Modified State-Trait Anxiety Inventory for Children (STAIC–M; Fox & Houston, 1983), only the RCMAS and the STAIC–M directly assess worry.

The RCMAS includes a Worry and Oversensitivity subscale made up of 10 items, of which 6 directly assess worrisome thoughts. These six items address the following areas: "worrying all the time," "worrying what my parents will say to me," "worrying about what others think of me," "worrying about what is going to happen," "worrying when I go to bed," and "worrying about something bad happening to me." Fox and Houston's (1983) modified version of the original STAIC (Spielberger, 1973) also includes six items that assess worries about making mistakes, school, parents, future events, social evaluation, and worrying too much. Several studies have contrasted these measures in anxiety and nonanxiety disordered samples and thus provide preliminary data on the relevance of worry to anxiety disorder.

Mattison and Bagnato (1987) compared Worry/Oversensitivity scores from the RCMAS in 8- to 12-year-old boys with an anxiety disorder (OAD; n = 16), with dysthymic disorder (n = 15), and attention deficit hyperactivity disorder (ADHD; n = 26) comparison groups. The percentage of participants in each group with a T score greater than 60 (defined as pathologically elevated) on this subscale did not differ across the three groups (OAD = 31%, dysthymia = 27%, and ADHD = 19%). Thus, clinically significant worries were not unique to boys with anxiety disorder. This finding is most remarkable given that the anxiety group was made up entirely of children with OAD, who by definition are considered chronic worriers. The lack of findings may be due to the relatively small number of participants in anxiety and dysthymia groups.

In a second, larger study including both boys and girls ranging in age from 8 to 12 years, Mattison, Bagnato, and Brubaker (1988) evaluated the diagnostic utility of the RCMAS in anxiety disordered (n = 44) and psychopathological controls (n = 95; mostly behavior, depressive, and adjustment disorders). Children with anxiety disorders had higher mean T scores for worry and oversensitivity than did controls (54.9 vs. 50.5, respectively; $p < .05$). Further, there were more children with anxiety disorder who had clinically significant worries ($T > 60$ on Worry/Oversensitivity) than psychopathological controls (41% vs. 19%, respectively, $p < .05$).

Given that anxious boys could not be discriminated from psychiatric controls in Mattison and Bagnato's (1987) study, these more recent findings by Mattison et al. (1988) suggest that the addition of girls to the sample may have resulted in the significant differences between groups. Although the data were not analyzed by sex, it may be that girls with anxiety disorder scored higher on the Worry/Oversensitivity scale than either boys or psychiatric controls. Such a finding would be consistent with previous studies of nonreferred children in which girls reported significantly more worries than boys (Silverman et al., 1995).

In another study, Strauss, Last, Hersen, and Kazdin (1988) compared Worry/Oversensitivity scores in boys and girls (5–17 years old) with comorbid depressive and anxiety disorders (n = 30), to those with anxiety disorders only (n = 54), and to psychopathological controls (n = 14; mostly behavior disorders). The group with anxiety and depression (63% with OAD) scored significantly higher on the Worry/Oversensitivity subscale than did the "pure" anxiety group (45% with OAD; 7.9 vs. 4.1, $p < .05$) or psychopathological controls (7.9 vs. 3.1, $p < .05$). No differences were observed between the pure anxiety and psychopathological control groups for worry.

The findings from this study suggest that worrisome thoughts may be a prominent feature only of more severely disturbed, anxious children (i.e., those with comorbid depressive disorders). Again, sex effects cannot be determined as data were not analyzed separately for boys and girls. Participants in the psychopathological control group also were significantly younger than the two anxiety groups, and this may have affected the findings. Previous studies have found younger children to report more fears than older children (see Campbell, 1986), and suggest a similar relation for worry (Silverman et al., 1995).

More recently, Perrin and Last (1992) compared both RCMAS and STAIC–M scores in boys (5–17 years old) with an anxiety disorder only (n = 105) to psychopathological (ADHD; n = 59) and never psychiatrically ill (NPI) controls (n = 49). After controlling for age, children with anxiety and behavior disorder did not differ for total scores on the Worry/Oversensitivity scale (4.9 vs. 3.9, respectively). In addition, anxious cognition in general, as measured by the STAIC–M Cognitive-Trait Anxiety subscale, did not distinguish these two groups (anxiety = 15.1 vs. ADHD = 14.3). Significant differences on these two measures were found only between anxious boys and normal controls (Worry/Oversensitivity scale scores = 4.9 for anxiety vs. 2.8 for NPI; $p < .001$; Cognitive-Trait Anxiety subscale scores = 15.1 for anxiety vs. 13.2 for NPI; $p <$

.005). Again, generalization of these findings is limited by the absence of girls in the sample.

Taken together, the literature just described provides support for the notion that worries play an important etiological role in severe childhood anxiety. Specifically, children with anxiety disorder appear to worry more frequently than children who do not have anxiety disorder (Perrin & Last, 1992). Comparisons with control children who had behavior disorder, however, reached significance only when girls (Mattison et al., 1988) or both older and depressed children were included in the anxiety group (Strauss et al., 1988). In addition, these studies of clinically referred children did not address the frequency of specific worries or their relation to specific anxiety disorders. Thus, it is not clear whether excessive worrying is a distinct feature of all children with anxiety disorder or just those with particular disorders. Additional studies that address age, sex, and psychiatric comorbidity are needed before any conclusions can be drawn about the etiological role of worry in childhood anxiety.

Last, interpretation of this literature is difficult given the limitations of both the RCMAS and STAIC–M. Neither measure was designed specifically to assess worry and, as such, have few items that do so. Moreover, individual worry items on these measures are only vaguely related to the *DSM–III–R* criteria for anxiety disorders. Thus, a *DSM*-relevant measure of worry may have yielded a more consistent pattern of differences between children with and without anxiety disorder.

In this study, we examine the nature and frequency of self-reported worries in children with anxiety disorders, and contrast these with those reported by both psychopathological (ADHD) and NPI controls. To address certain limitations cited in previous investigations, we constructed a 31-item self-report measure of worry from the *DSM–III–R* diagnostic criteria for anxiety disorders (Worry Scale). Further, because previous literature suggested that sex and age may be related to self-reported worry, we included both boys and girls and statistically controlled for age. Last, we present data on the frequency of separation-related worries in children with and without SAD to address the specificity of worries to a particular anxiety disorder subtype.

Method

Participants

Participants included 72 children with a *DSM–III–R* anxiety disorder (28 girls and 44 boys): 50 with ADHD (7 girls and 43 boys) and 55 who were nonreferred and never psychiatrically ill (NPI; 29 girls and 26 boys). Children in the anxiety group were recruited from the Child and Adolescent Anxiety Clinic at Western Psychiatric Institute and Clinic (WPIC), University of Pittsburgh School of Medicine and the Anxiety Treatment Center at Nova Southeastern University. Children with ADHD were recruited from the general outpatient facility at WPIC. NPI participants were recruited from the Pittsburgh community using Cole's directory.

Participation in the study was limited to children between 5 and 13 years of age to insure maximum similarity between the anxiety and ADHD groups. Inclusion criteria for the anxiety group were a current *DSM–III–R* anxiety disorder with no comorbid ADHD or depressive disorders. For the ADHD group, inclusion criteria were a current *DSM–III–R* diagnosis of ADHD with no comorbid anxiety or depressive disorders. For the NPI group, a child had to have no history of any psychiatric disorder or treatment contact to be eligible for inclusion. Consent for study participation was obtained from both parent and child.

The sociodemographic characteristics of the three groups are presented in Table 1. Participants in the study ranged from 5 to 12.9 years of age ($M = 9.5$, $SD = 1.9$) and were predominantly Caucasian. No significant group differences were found for age of child at study entry, $F(2, 174) = 2.9$, $p = .056$, or race, $\chi^2(2) = 5.3$, $p = .069$. However, significant differences were found for socioeconomic status (SES), $\chi^2(2) = 9.8$, $p = .008$. Specifically, there were more children from low-SES backgrounds (Hollingshead, 1975, Status IV or V) in the ADHD group than both the anxiety and NPI groups, $\chi^2(1) = 7.9$, $p = .005$ and $\chi^2(1) = 6.7$, $p = .009$.

At study entry, 99 anxiety disorders were assigned to participants in the Anxiety group (72 as primary anxiety disorders and 17 as secondary anxiety disorders). Frequencies for the specific anxiety disorder subtypes (primary and secondary) are presented in Table 2.

Procedure

Before the intake interview, participants completed several questionnaires designed to assess anxiety, including the Worry Scale (Last, 1986a), the RCMAS (Reynolds & Paget, 1981), the FSSC–R (Ollendick, 1983), and the STAIC–M (Fox & Houston, 1983).

Table 1. *Sociodemographic Characteristics of Boys in the Anxiety, ADHD, and NPI Groups*

	Group		
Demographic	**Anxiety**	**ADHD**	**NPI**
n	72	50	55
Age			
M	9.9	9.0	9.1
SD	2.1	2.1	2.0
% Caucasian	76.4	62.0	58.2
% Low SES[a]	30.6_a	56.0_{ab}	30.9_b

Note: NPI = never psychiatrically ill. Groups with similar subscripts differ at $p < .05$.

[a]Hollingshead (1975) socioeconomic status strata = IV or V.

Normative, validity and reliability data have been established for the RCMAS, STAIC–M, and FSSC–R. Young children who had difficulty completing the scales independently were assisted by the intake interviewer.

The Worry Scale is a 31-item self-report measure of worrisome thoughts (see Appendix). This highly face-valid measure was derived from the *DSM–III–R* criteria for SAD, overanxious disorder, avoidant disorder, and social phobia. Specifically, 10 items assess worries involving calamitous events to oneself or parents, abandonment, and being alone (SAD).

Three items assess worries about contact with strangers and meeting new people (avoidant disorder). Fourteen items assess worries about future events; past mistakes; bodily sensations and aches; and competency in school, sports, and social relationships (overanxious disorder). Last, four items assess worries involving potential social evaluation (social phobia). Individual item responses—scored on a 3-point scale ranging from 0 (*never*), 1 (*sometimes*), to 2 (*often*)—are summed to yield a total score (Total Worry) and the total number of *often* responses (Number of Intense Worries). In addition, because the first 10 items assess separation anxiety–related worries, these items were summed to produce a Total SAD score.

High internal consistency coefficients (Cronbach's α) were found for the Worry Scale, computed separately for children in the three groups: anxiety = .93, ADHD = .92, and NPI = .89. In addition, Total Worry scores on the scale were significantly correlated with Total scores on the FSSC–R, RCMAS, and STAIC–M scales. Correlations among the measures are presented in Table 3.

Following completion of all questionnaires, the child and at least one parent were interviewed separately by a clinical child psychologist with a modified version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present Episode (K–SADS; Last, 1986b). This version of the K–SADS was modified by Last to include comprehensive sections on all *DSM–III–R* anxiety disorders, using rating scales based on *DSM–III–R* criteria. Also, this modified interview schedule covers past and current pathology. Family SES was measured by the Hollingshead Four Factor Index of Social Status (Hollingshead, 1975).

Interrater diagnostic agreement was obtained by having a second clinician independently review audiotapes of both the child and parent interviews (66 of the 177 intake interviews conducted; 37.3%) and assign all relevant diagnoses. Kappa coefficients of agreement for the specific disorders were .93, .98, and 1.0 for any anxiety disorder, ADHD, and no disorder, respectively. Kappa coefficients for the specific anxiety disorders were as follows: SAD = .92, overanxious disorder = .91, avoidant disorder = .76, panic disorder = .89, social phobia = .92, simple phobia = .75, obsessive–compulsive disorder = .79, and posttraumatic stress disorder = 1.0. In case of diagnostic disagreement, the diagnosis given by the live interviewer was used.

The overall severity of a disorder was assessed on a 5-point Likert scale ranging from 0 to 4, with higher scores indicating greater severity. Severity ratings reflected both symptoms and impairment. Interrater agreement for clinician severity ratings of primary disorders in the anxiety and ADHD groups, based on 44 of the 122 intake interviews, was high (Cronbach α =

Table 2. *Diagnostic Characteristics of the Anxiety Group (N = 72)*

	Primary		Secondary	
Disorder	**%**	***n***	**%**	***n***
Separation Anxiety Disorder	33.3	24	6.9	5
Simple Phobia	31.9	23	15.3	11
Obsessive–Compulsive Disorder	9.7	7	2.8	2
Overanxious Disorder	8.3	6	2.8	2
Social Phobia	4.2	3	5.6	4
Avoidant Disorder	4.2	3	4.2	3
Panic Disorder	2.8	2	1.4	1
Posttraumatic Stress Disorder	2.8	2	0.0	0
Anxiety Disorder NOS	1.4	1	0.0	0

Note: NOS = not otherwise specified.

Table 3. *Relation of Worry Scale to Other Measures of Anxiety and Depression in Children in the Anxiety, ADHD, and NPI Groups*

	r	
Measure	**Total Number of Worries**	**Total Number of Intense Worries**
FSSC–R		
Total Score	.54	.39
Number of Intense Fears	.44	.46
Factor 1: Failure/Criticism	.49	.28
Factor 2: Unknown	.50	.43
Factor 3: Injury/Small Animals	.36	.24
Factor 4: Danger/Death	.48	.36
Factor 5: Medical Fears	.27	.19*
STAIC–M		
State Anxiety Total	.22	.13**
Trait Anxiety Total	.66	.46
RCMAS		
Factor 1: Physiological Anxiety	.53	.42
Factor 2: Worry/Oversensitivity	.72	.54
Factor 3: Concentration Anxiety	.58	.44
CDI Total Score	.32	.29

Note: All correlations significant at $p < .001$ (two-tailed) except where specified.
*$p = .002$. **$p = .11$.

.81). In case of disagreement, severity ratings from the live interviewer were used. The anxiety and ADHD groups did not differ in the severity of their primary disorders (2.4 vs. 2.5, respectively; $t = -.49$, $p = .63$).

Data Analysis

Comparison of the three groups for Total Worry scores and Number of Intense Worries were carried out using separate 3 × 2 analyses of covariance (ANCOVAs; Diagnostic Group × Sex, with Age as the covariate) with post hoc t tests. Participants with SAD (primary or secondary) were then compared separately with the ADHD and NPI groups for a Total SAD Score using a one-way ANCOVA (Age) with post hoc t tests. Finally, the frequency of *often* responses to selected Worry Scale items were compared for the three groups using 3 × 2 chi-square analyses. Significant 3 × 2 chi-squares were then followed with pairwise group comparisons using 2 × 2 chi-squares with Yate's correction for continuity.

Results

Table 4 presents means and standard deviations for the Worry Scale for boys and girls separately and together in the three diagnostic groups. Because age at intake was not a significant covariate in either the analysis of total scores or the number of intense worries, presented means are unadjusted for age. For the total number of worries, no significant effect was observed for sex, $F(1, 170) = 0.6$, $p = .43$, diagnostic group, $F(2, 170) = 2.9$, $p = .06$, or the Sex × Diagnostic Group interaction, $F(2, 170) = 1.7$, $p = .18$. For the total number of intense worries, a significant main effect was observed for diagnostic group, $F(2, 170) = 5.4$, $p = .005$, but not sex, $F(1, 170) = 1.9$, $p = .17$, or the Group × Sex interaction, $F(2, 170) = 1.4$, $p = .24$. Post hoc comparisons revealed significant differences between the anxiety and NPI groups for the total number of intense worries ($t = 3.1$, $p = .002$). The anxiety and ADHD groups did not differ for total number of intense worries.

Twenty-nine participants in the anxiety group had a diagnosis of SAD (primary or secondary; see Table 2). Total SAD scores were computed and then contrasted for this SAD subgroup and participants in the ADHD and NPI groups (male and female). After controlling for age, a significant effect was found among the three groups, $F(2, 131) = 6.8$, $p = .002$. Specifically, children with SAD reported significantly more SAD-related worries than both the ADHD (8.9 vs. 5.9, $t = 2.8$, $p = .007$) and NPI groups (8.9 vs. 5.4, $t = 3.6$, $p = .0004$). No significant differences were observed between the ADHD and NPI groups on this subscale.

Table 4. *Worry Scale Scores by Diagnostic Group and Sex*

	Anxiety	ADHD	NPI	All Groups
Total Score				
Girls				
M	23.1	14.9	16.1	19.1
SD	11.6	9.8	8.6	10.7
n	28	7	29	64
Boys				
M	16.9	17.4	14.9	16.7
SD	12.0	11.3	9.9	11.3
n	44	43	26	113
Girls and Boys				
M	19.4	17.1	15.5	
SD	12.2	11.1	9.2	
n	72	50	55	
Number of Intense Worries				
Girls				
M	4.3	1.0	1.7	2.8
SD	4.2	1.1	3.2	3.8
n	28	7	29	64
Boys				
M	3.9	3.7	2.1	3.4
SD	5.2	4.4	2.3	4.4
n	44	43	26	113
Girls and Boys				
M	4.1_a	3.3_{ab}	1.9_b	
SD	4.2	1.1	3.2	
n	72	50	55	

Note: Scores are unadjusted for age. Groups with similar subscript differ at $p < .05$.

To assess which worries were most likely to be reported as intense (i.e., occurring *often*), the 31 Worry Scale items were recoded to indicate 2 as *often* versus 1 as *sometimes* or 0 as *never* and compared for the three groups (Table 5). Because no significant effect for sex was observed for the total number of worries or the total number of intense worries, results are presented for girls and boys together in the three groups. Overall, less than one third of the participants in the anxiety group reported an intense worry (any). Also, slightly less than one fourth of the participants in the two control groups reported any intense worries.

Intense worries about schoolwork were among the most prevalent in all three groups (anxiety = 23.6%, ADHD = 18.0%, and NPI = 21.8%). Not surprisingly, given the number of children with SAD in the anxiety group, the most prevalent intense worries were those that involved calamitous events befalling one's parents or oneself (19.4%–29.2%). Interestingly, separation-related worries were among the most prevalent intense worries reported in both the ADHD (18%–20%) and NPI groups (10.9%–12.7%).

Given the large number of potential analyses, several items were selected for comparison based on their prevalence in the three groups (Items 1, 2, 8, 11, 12, and 27). Significant 3 × 2 chi-squares were observed for these items: Item 1, $\chi^2(2) = 9.8$, $p = .008$; Item 2, $\chi^2(2) = 12.0$, $p = .002$; Item 8, $\chi^2(2) = 6.7$, $p = .04$; Item 11, $\chi^2(2) = 7.1$, $p = .03$; Item 12, $\chi^2(2) = 6.4$, $p = .04$; and Item 27, $\chi^2(2) = 7.3$, $p = .03$. Comparisons among the specific groups were then carried out with 2 × 2 chi-squares. Significant differences were observed between the Anxiety and NPI groups for all items (*p*s = .002, .0005, .013, .014, .028, and .013 for Items 1, 2, 3, 4, 12, and 27, respectively). Thus, intense worries about separation (Items 1, 2, and 8), strangers (Item 11), not having enough friends (Item 12), and worries about going to school were more prevalent in the anxiety than NPI group. The anxiety and ADHD groups did not differ on any item. Last, the ADHD group reported a higher frequency of intense worries about something bad happening to their parent ($p = .002$) and not having enough friends ($p = .008$) than the NPI group.

Table 5. *Frequency of Intense ("Often") Worries in the Anxiety, ADHD, and NPI Groups*

	%		
Worry Scale Item: I Worry About ...	**Anxiety[a]**	**ADHD[b]**	**NPI[c]**
1. Bad Things Happening to Me	19.4	10.0	1.8
2. Bad Things Happening to My Parents	23.6	20.0	1.8
3. My Parents Abandoning Me	20.8	8.0	12.7
4. Being Kidnapped	9.7	14.0	7.3
5. Getting Lost	2.8	4.0	10.9
6. Being in an Accident	5.6	14.0	3.6
7. That I Might Die	16.7	14.0	3.6
8. That My Parents Might Die	29.2	18.0	10.9
9. Being Home Alone	12.5	10.0	7.3
10. Being Alone Away From Home	19.4	12.0	7.3
11. Being Around Strangers	20.8	10.0	5.5
12. Having Enough Friends	8.3	12.0	0.0
13. People Not Liking Me	11.1	6.0	5.5
14. Making a Mistake	6.9	10.0	5.5
15. When I Grow Up	8.3	10.0	5.5
16. Past Mistakes	8.3	4.0	3.6
17. Being Embarrassed Around Others	18.1	18.0	9.1
18. What Other People Will Think of Me	12.5	10.0	1.8
19. Always Doing a Good Job	20.8	14.0	9.1
20. School Work	23.6	18.0	21.8
21. Doing Sports Well	12.5	12.0	9.1
22. Being Called on by the Teacher	2.8	2.0	5.5
23. Meeting New Kids	4.2	10.0	3.6
24. Meeting New Adults	4.2	6.0	1.8
25. Talking in Front of People	12.5	6.0	5.5
26. People Looking at Me	12.5	14.0	1.8
27. Going to School	18.1	8.0	3.6
28. Aches and Pains	15.3	6.0	9.1
29. Nobody Loves Me	6.9	8.0	5.5
30. The Future	15.3	14.0	7.3
31. My Heart Beating Fast	5.6	8.0	3.6

[a] $n = 77$. [b] $n = 50$. [c] $n = 50$.

Discussion

In this study, the nature and frequency of worrisome thoughts were examined in clinically referred children with anxiety disorders and with psychopathological and normal controls. Differences were found among the three groups for the number of intense (frequent) worries but not the total number of worries reported (infrequent or frequent). In addition, specific worries were more important to group differences than was the total number of worries or number of intense worries reported. Overall, the results provide limited support for the hypothesis that excessive worrying is a unique characteristic of individuals wioth anxiety disorder (Beck & Clark, 1988; Watson & Kendall, 1989).

Regarding the total number of worries reported, the anxiety, ADHD, and NPI groups did not significantly differ. Consistent with previous investigations (Bell-Dolan et al., 1990; Brown et al., 1986; Orton, 1982; Silverman et al., 1995; Vasey et al., 1994), our results suggest that infrequent worrying about a variety of issues is common to both psychiatrically ill and normal children. Further, they suggest that infrequent worrying about one or even several areas may not be a clinically meaningful index of anxious cognition.

By contrast, children with anxiety disorder report a higher number of intense or frequent worries than NPI but not ADHD controls. However, ADHD controls also did not differ from those who were never ill. Although these findings may be due to insufficient power to detect group differences, they suggest that intense worries may play an important etiological role in anxiety disorder. This latter finding is supported by the observation that separation-related worries were more prevalent among children with SAD than *both* children with ADHD and NPI controls. Thus, it would appear that worries specific to the child's anxiety disorder are a unique and distinguishing characteristic relative to children with anxiety disorder.

To determine if this worry-specificity hypothesis also applied to children with other anxiety disorders, we compared children with SAD ($n = 29$) to those with another anxiety disorder ($n = 43$) for the total score on the separation-related items. Again, after controlling for age, the SAD group reported significantly more separation-related worries than children with other anxiety disorders (8.9 vs. 5.6), $F(1, 69) = 7.5$, $p = .008$. Not surprisingly, these findings suggest that the total frequency of worries is not as clinically meaningful as the content of those worries and their relation to the child's anxiety disorder. Additional studies examining the frequency of specific worries in subgroups of children with anxiety disorder are needed to address this issue more fully.

Interestingly, children with ADHD were more likely to report intense worries about going to school and having enough friends when compared with NPI controls. These findings may reflect the significant impairment in learning and social functioning associated with ADHD. Although they are based on real problems, these more frequent worries about school and friendships also may reflect a heightened risk for anxiety disorder in children with ADHD. Compared with the anxiety group as a whole, children with ADHD were remarkably similar in both the frequency and types of worries reported. Previous studies also have found anxiety disordered and ADHD children to report similar levels of fearfulness and trait anxiety (Jensen, Shevrette, Xenakis, & Ritchers, 1993; Perrin & Last, 1992). Moreover, comorbid anxiety disorders are common in nonreferred children with ADHD (22%–24%; Anderson, Williams, McGee, & Silva, 1987; Bird, Gould, & Staghezza, 1993) and among their first-degree relatives compared with controls without ADHD (Biederman, Faraone, Keenan, Knee, & Tsuang, 1990; Biederman et al., 1992; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991). Furthermore, children with ADHD develop new anxiety disorders at a rate similar to that observed for anxious children over 4 years (Last, Perrin, Hersen, & Kazdin, in press). Although additional studies are needed to clarify the relation between the two disorders, our findings suggest that clinicians should be alert to clinically significant levels of worry in children with ADHD.

Previous literature had suggested that younger, nonreferred children (Campbell, 1986) and girls (Silverman et al., 1995) report more symptoms of fear and worry than older children and boys. As for age, our findings do not support this hypothesis. Specifically, we observed no statistically significant relation between age and either the total number of worries or the number of intense worries reported. These findings are consistent with two previous investigations that found no age effect for worry (Perrin & Last, 1992), or a small relation between grade level and the total number of worries reported (Silverman et al., 1995), and suggest that infrequent worries are relatively stable over time in preadolescent children. Whether the frequency or content of worries change during adolescence needs to be evaluated in future studies.

Concerning sex of child and its relation to worry, no significant differences were found for the total number of worries or number of intense worries between boys and girls in this sample. These findings run contrary to those of Silverman et al. (1995), who observed that nonreferred girls reported significantly more worries than boys. However, our findings may have been due to the small number of girls in the ADHD group ($n = 7$) and thus reduced power. To test this hypothesis, we compared the anxiety group with NPI controls only, controlling for both sex and age. When reanalyzing the data in this manner, we continued to find no main effect

for sex, although it did approach significance ($p = .06$). Additional studies with a larger number of girls and psychopathological controls are needed to address this sex–worry relation more fully .

In summary, this study suggested that worries are common to children who have and do not have anxiety disorder. However, worries specific to the child's anxiety disorder distinguish them from their counterparts without anxiety disorder. Thus, worries appear to play some role in the etiology of severe anxiety, and at the least, should be addressed in evaluation and treatment of childhood anxiety disorders. These findings do not suggest that age is associated with worry in children who either do or do not have anxiety disorder. Anxious apprehension about school and friendships appear to be significant areas of concern for some children with ADHD and may warrant attention from mental health professionals.

Last, we shall point out the limitations of our investigation. First, there was a higher frequency of low-SES children in the ADHD group compared to the anxiety and NPI groups. Previous literature suggests that African Americans, who are often overrepresented in low-SES samples, report more worries than children of European descent (Silverman et al., 1995). Future studies need to address the relation between race, SES, and worry with larger samples of children with and without anxiety disorder. Second, the conclusions that can be drawn about the uniqueness of worrisome thoughts to children with anxiety disorder, in general, were limited by the very small number of girls in the ADHD comparison group. Third, participants with anxiety disorder and ADHD in our sample were clinically referred and may represent a more severely disturbed population. Worrisome thoughts may reliably discriminate anxiety from nonanxious, psychiatrically disturbed children who are not seeking treatment. Finally, no normative data are yet available for the Worry Scale, and it is possible that alternate measures of childhood worry may have produced a different pattern of results.

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Appendix: The Worry Scale

This questionnaire asks about different things that kids sometimes worry or think about. Put an X in the box that best describes how often you have these worries.

	Never	Sometimes	Often
1. I worry about bad things happening to me	☐	☐	☐
2. I worry that something bad will happen to my mother/father	☐	☐	☐
3. I worry that my mother/father might leave and not return	☐	☐	☐
4. I worry that I might get kidnapped	☐	☐	☐
5. I worry that I might get lost	☐	☐	☐
6. I worry that I might be in an accident	☐	☐	☐
7. I worry that I might die	☐	☐	☐
8. I worry that my mom/dad might die	☐	☐	☐
9. I worry about being alone at home	☐	☐	☐
10. I worry about being alone away from home	☐	☐	☐
11. I worry when I'm around people I don't know	☐	☐	☐
12. I worry that I don't have enough friends	☐	☐	☐
13. I worry that people won't like me	☐	☐	☐
14. I worry that I might make a mistake	☐	☐	☐
15. I worry about when I grow up	☐	☐	☐
16. I worry about mistakes I have made in the past	☐	☐	☐
17. I worry about being embarrassed in front of others	☐	☐	☐
18. I worry about what other people will think of me	☐	☐	☐
19. I worry about always doing a good job	☐	☐	☐
20. I worry about my school work	☐	☐	☐
21. I worry about how well I do at sports	☐	☐	☐
22. I worry about being called on by the teacher at school	☐	☐	☐
23. I worry about meeting new kids	☐	☐	☐
24. I worry about meeting new adults	☐	☐	☐
25. I worry about talking in front of people	☐	☐	☐
26. I worry about people looking at me	☐	☐	☐
27. I worry about going to school	☐	☐	☐
28. I worry about aches and pains	☐	☐	☐
29. I worry that nobody loves me	☐	☐	☐
30. I worry about the future	☐	☐	☐
31. I worry about my heart beating fast	☐	☐	☐