Toddler Anxiety Disorders: A Pilot Study

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ABSTRACT

Objective: This research examined the validity of criteria for diagnosing social phobia (SOC) and generalized anxiety disorder (GAD), where the *DSM-IV* criteria were modified to better identify toddlers who could have these disorders. **Method:** Diagnoses were made with a semistructured clinical interview that included child observations. Parents and caregivers completed child behavior, temperament, and socioemotional functioning questionnaires to test convergent and discriminant validity. **Results:** Of 72 children, 18 months to 5 years old, 19 met modified SOC criteria (8 met *DSM-IV* SOC criteria also), 29 met modified GAD criteria (5 met *DSM-IV* GAD criteria also), and 35 met no anxiety disorder criteria. Children with modified SOC were more likely than nonanxious children to display higher levels of anxiety symptoms and shyness/inhibition and to have anxious parents. Modified SOC did not relate to the nonanxiety constructs (cuddling, imaginary play, fine motor). Children with modified GAD did not consistently demonstrate higher levels of anxiety symptoms, did not have more anxious parents than nonanxious children, and did not have higher mean scores on the nonanxiety constructs. **Conclusions:** This research provides initial evidence supporting convergent and discriminant validity for the modified SOC criteria but not the modified GAD criteria. *J. Am. Acad. Child Adolesc. Psychiatry,* 2006;45(7):859–866. **Key Words:** infant, toddler, preschooler, anxiety, diagnosis.

Although anxiety disorders have been well described for older children and adults (American Psychiatric Association, 1994), little research has characterized anxiety disorders in toddlers and young children. In general, toddlers cannot meet the *DSM-IV* (American Psychiatric Association, 1994) criteria for social phobia (SOC) or generalized anxiety disorder (GAD). This is because toddlers have limited verbal skills and also because of developmental issues. For example, children do not generally develop a capacity for being concerned about the evaluation of others until about 4 years of age (Asendorpf, 1989). Thus, it is difficult for toddlers to meet criteria for SOC, which requires that the child fear that he or she will act in a way that will be humiliating or embarrassing. Similarly, toddlers can often show frequent fears but do not necessarily verbally express negative emotions (Harter and Pike, 1984) or repeated worries. Therefore, toddlers generally cannot meet criteria for GAD.

To address issues related to young child diagnosis, a group of clinician researchers met several times in 2001, funded by the American Academy of Child and Adolescent Psychiatry Work Group on Research. This group developed the Research Diagnostic Criteria-Preschool Age (RDC-PA; Task Force on Research Diagnostic Criteria Infancy and Preschool, 2003). Because young children could not generally meet criteria for SOC, research criteria were proposed for young children that modified the *DSM-IV* SOC diagnosis in the following ways: eliminating the criterion that the individual fear that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing and adding the more easily observed behavioral criterion of "excessive shrinking from contact with and persistent reluctance to approach unfamiliar people" to replace it. The latter criterion was based on research concerning behavioral inhibition (BI).

The temperament BI refers to a child's tendency to exhibit quiet withdrawal in response to novel inanimate

Accepted December 14, 2005.

All of the authors are with The George Washington University.

This work was supported by NIMH R01 MH067076 to Dr. Warren.

The Diagnostic Interview for Infants to Preschoolers for Anxiety can be obtained from Dr. Warren.

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DOI: 10.1097/01.0000220852.94392.eb

stimuli and strangers (Kagan, 1994). BI has been reliably measured by several different research groups (Fox et al., 2001; Kagan, 1994), has shown heritability (Robinson et al., 1992), and has been found to predict later anxiety disorders, particularly SOC (Biederman et al., 1993, 2001). Most significantly, 2-year-old children with BI have been found to be more likely than uninhibited children to exhibit SOC as adolescents (Schwartz et al., 1999). Thus, young children with BI who will not approach unfamiliar peers and who are experiencing impairment in daily functioning could be experiencing SOC.

The RDC-PA group did not complete a review of GAD for this age range. However, using a similar strategy and clinical experience, we modified the criteria for GAD by substituting "two or more fears" for the excessive anxiety and worry criteria. The aim of the research was for the modified criteria to expand the diagnoses downward in age so that younger children with the diagnoses could be identified. To compare the modified criteria with the *DSM-IV* criteria, we hoped to find some children who met the modified criteria alone and other older children who met both the modified and *DSM-IV* criteria.

The approach of modifying adult disorder criteria for younger children has been used by several different research groups for other disorders (Luby et al., 2003; Scheeringa et al., 2003). The present research adhered to steps that have been followed previously for this type of investigation. First, children with a specific cluster of symptoms, showing impaired functioning, were clinically identified. Second, the cluster of symptoms exhibited by the children was compared with adult disorders to determine whether the symptoms could represent an early form of an adult disorder. Third, adult criteria were adapted in an age-appropriate way so that the new criteria could be tested. Fourth, research was conducted to determine whether reliability and validity for the criteria could be established. A final step would involve longitudinal and behavioral genetic research to confirm associations between the toddler and adult disorders. The present investigation incorporated the first four steps, focusing primarily on testing the validity of the modified diagnoses.

Verification of diagnoses in psychiatry has been a challenging process (Kendell, 1982). Initially, diagnostic research focused on establishing objective criteria that could be reliably identified by differing individuals (Kendell, 1982). Later studies concentrated primarily on establishing external validity for the diagnoses (Kendler, 1990). For example, Robins and Guze (1989) outlined the first step of diagnostic validation as a description of the clinical syndrome with a later focus on external validation. One aspect of this validation process included confirmation by finding an increased prevalence of the same disorder among close relatives. To improve the process of validation, Campbell and Fisk (1959) described a method by which better validation could be achieved by examining both convergent and discriminant validity and by using multiple methods for validation. The present research incorporated these recommendations by initially examining interrater reliability for the diagnoses but then focused primarily on testing external validity. Both convergent validity and discriminant validity were examined using multiple measures and two different raters.

The specific hypotheses were as follows:

1. *Convergent validity with questionnaires completed by two different raters.* Children with modified SOC ($_{MOD}$SOC) would be significantly more likely to be rated by parents and caregivers (e.g., teachers or daycare providers) as showing more anxiety symptoms and shyness/inhibition than children not diagnosed with an anxiety disorder.
2. *Discriminant validity with questionnaires.* $_{MOD}$SOC children and nonanxious children would not show substantial differences on levels of enjoying cuddling, imaginary play, or fine motor activity. These constructs were chosen because they represent typical developmental phenomena and would not be obviously associated with anxiety disorders.
3. *Validation through first-degree familial association.* $_{MOD}$SOC children would be significantly more likely than children not diagnosed with an anxiety disorder to have anxious parents.
4. *Convergent validity with questionnaires completed by two different raters.* Children with modified GAD ($_{MOD}$GAD) would be significantly more likely to be rated by parents and caregivers as showing more anxiety symptoms and fearfulness/anxiety than children not diagnosed with an anxiety disorder.
5. *Discriminant validity with questionnaires.* $_{MOD}$GAD children and nonanxious children would not show substantial differences on the levels of enjoying cuddling, imaginary play, or fine motor activity.

6. *Validation through first-degree familial association.* $_{MOD}$GAD children would be significantly more likely than children not diagnosed with an anxiety disorder to have anxious parents.

The modified criteria were developed to extend existing diagnoses to a younger, less verbal age group. Therefore, we anticipated that all children who met criteria for the standard *DSM-IV* criteria would also meet criteria for the modified diagnoses. In addition, if the underlying diagnoses were the same for the *DSM-IV* and modified criteria, then the validation patterns would be expected to be similar. Therefore, we anticipated that the pattern of findings for the $_{MOD}$SOC children would be similar to the pattern for the subset of children who met the more restrictive *DSM-IV* SOC criteria ($_{DSM}$SOC). Similarly, we anticipated that the pattern of findings for $_{MOD}$GAD children would be similar to the pattern for children who met criteria for *DSM-IV* ($_{DSM}$GAD).

METHOD

Participants

Families were recruited through various sources to achieve a mix of children, weighted toward toddlers, likely to have a substantial number with anxiety disorders as well as children without anxiety disorders. Families were included only if they were able to be contacted by telephone, were able to speak English, agreed to participate, had a biological child between 18 and 60 months old, and were able to schedule an interview. Moreover, children were included in the analyses only if they met criteria for $_{MOD}$SOC, $_{DSM}$SOC, $_{MOD}$GAD, or $_{DSM}$GAD or had no anxiety disorder of any kind. Therefore, children were excluded if they met criteria for an anxiety disorder that was not one of the ones listed above (e.g., separation anxiety disorder or specific phobia) but did not meet criteria for $_{MOD}$SOC, $_{DSM}$SOC, $_{MOD}$GAD, or $_{DSM}$GAD; had been exposed to trauma, abuse, or severe stress; had ever been diagnosed with a major medical problem; or had ever been diagnosed with autism or pervasive developmental disorder. There were three recruitment sources: (1) In a pediatrics clinic, 245 consecutive parents of children up to 5 years old were approached. (2) Mailings were sent to approximately 2,000 families with 2-year-olds. Addresses were obtained from a commercial company based on birth records. (3) In a young child anxiety disorders clinic, 10 consecutive parents of children were approached. The final sample of 72 children included all families willing and able to participate (pediatrics clinic, 31%; mailings, 57%; child anxiety disorders clinic, 12%).

Children had a mean age of 32 months (SD = 8; range 19–56 months). Seven percent were toddlers younger than 2 years old, 72% were 2-year-old toddlers, and 21% were preschoolers. Fifty-one percent of the subjects were male. Seventy-nine percent were white, with 16% African American, 5% Asian, and 10% also self-identifying as Hispanic. Socioeconomic status assessed using the Hollingshead Four-Factor Index (Hollingshead, 1975) showed that 56% of the families were in level IV ("medium business, minor professional, technical") with 12% in level III ("skilled craftsmen, clerical, sales"), 32% in level II ("machine operators, semiskilled workers") and none in levels I ("unskilled laborers, menial service workers") or V ("major business and professional"). All of the study data were collected from the biological parent who self-identified as the primary caregiver (92% mothers, 8% fathers).

Measures and Procedures

Parents were interviewed with the Diagnostic Interview for Infants to Preschoolers for Anxiety (Warren and Dadson, 2001). This semistructured clinical interview consisted of groups of questions about behaviors that were indicative of the disorders of interest as well as specific phobia (SP) and separation anxiety disorder (SAD). The interview also included a standardized observational play session based partially on the work of Kagan (1994). The interviewer would refrain from any interaction with the toddler until near the end of the session. While the interviewer was talking with the parent, the toddler was generally supervised by another adult (babysitter or other parent). The interviewer would then ask the parent to bring the child into the room. Initially, the interviewer did not interact with the child but took toys out of a bag and displayed them for 1 minute. Then the interviewer began to talk about the toys while playing with them for one minute. Finally, the interviewer began to call the child over to play. After the child began to play with the interviewer, the parent was asked to leave the room briefly. As is typical for clinical assessments, the child's behaviors were taken into account when making the diagnoses. In particular, the interviewer looked for discrepancies between child behaviors (e.g., social anxiety, separation anxiety) and parent report and questioned the parent further if discrepancies were identified. Diagnoses were made only if behaviors were verified or if clear and compelling examples of behaviors were obtained. The interviewers were graduate-level students supervised closely by a board-certified child and adolescent psychiatrist who reviewed the videotapes. Interrater reliability conducted on a randomly selected 25% of the sample was high ($_{MOD}$SOC: $\kappa = 1.0$; $_{MOD}$GAD: $\kappa = 1.0$; SAD: $\kappa = 1.0$; SP: $\kappa = 0.77$; no anxiety disorders: $\kappa = 1.0$).

To test the validity of the modifications, parents and caregivers were asked to complete questionnaires concerning child anxiety symptoms, child shyness/inhibition, and child fearfulness/anxiety to test convergent validity and other child characteristics (enjoys cuddling, imaginary play, and fine motor activity) to test discriminant validity. Parental anxiety was also measured to provide an additional validity test.

Child Anxiety Symptoms. Parents and caregivers (e.g., daycare providers and teachers) completed the Child Behavior Checklist (CBCL) for ages 1.5 to 5 and the Caregiver-Teacher Report Form (CTRF) for ages 1.5 to 5, respectively. The CBCL and CTRF have been widely used and well validated (Achenbach and Rescorla, 2000). The *DSM*-oriented anxiety problems subscale was selected to test convergent validity because this subscale focuses only on symptoms of anxiety disorders and does not include symptoms of depression. Three parents did not complete the CBCL. Also, not all of the children had daycare providers or teachers, so the CTRF was completed for 57 (79%) of the children.

Child Shyness/Inhibition. Parents completed the Early Childhood Behavior Questionnaire (ECBQ; Putnam et al., 2002) developed by Rothbart and colleagues to measure temperament for children ages 16 to 35 months of age. This questionnaire was used for the present research because it was designed to be objective by focusing on clearly reportable behaviors and because it had been validated

TABLE 1
Associations Between *DSM*-Oriented Scales from the CBCL/CTRF and Modified and *DSM-IV* Anxiety Diagnoses

CBCL/CTRF Scales	$_{MOD}$SOC (n = 45)	$_{DSM}$SOC (n = 43)	$_{MOD}$GAD (n = 58)	$_{DSM}$GAD (n = 40)
Anxiety[a]	0.50**	0.45**	0.22	0.56**
Depression	0.27	0.34*	0.10	0.32
ADHD	0.00	0.15	0.04	0.12
ODD	0.22	0.39*	0.30*	0.24

Note: CBCL/CTRF scales represent the mean of the standardized CBCL and CTRF scores. Point biserial partial correlations were used, controlling for age and gender. Note that the modified and *DSM-IV* groups here are defined as mutually exclusive within diagnostic type. CBCL = Child Behavior Checklist; CTRF = Caregiver Teacher Report Form; $_{MOD}$SOC = modified social phobia; $_{DSM}$SOC = *DSM-IV* social phobia; $_{MOD}$GAD = modified generalized anxiety disorder; $_{DSM}$GAD = *DSM-IV* generalized anxiety disorder; ADHD = attention-deficit/hyperactivity disorder; ODD = oppositional defiant disorder.

[a] These correlations with the anxiety mean are presented for comparison purposes here. Hypothesis tests are presented for the CBCL and CTRF anxiety scales separately in Table 2.

* $p < .05$, ** $p < .01$.

(Putnam et al., 2002). Because some of the children were older than 35 months, the questionnaire was used with 54 children (75% of the sample). The shyness and sociability subscales were used to measure child shyness/inhibition.

Parents also completed the Infant Toddler Social and Emotional Assessment (ITSEA; Carter and Briggs-Gowan, 2000a), which is a developmentally and clinically sensitive measure to assess social-emotional problems and competencies in 12- to 36-month-old children. This questionnaire has undergone thorough research and validation (Briggs-Gowan and Carter, 1998; Carter and Briggs-Gowan, 2000b). Because some of the children were older than 36 months, the questionnaire was used with 56 children (78% of the sample). The inhibition to novelty subscale was also used to measure shyness/inhibition.

Child Fearfulness/Anxiety. For the construct child fearfulness/anxiety, the fear subscale from the ECBQ and the general anxiety and separation distress subscales from the ITSEA were used.

Discriminant Validity Variables. Child enjoyment of cuddling and fine motor activity were measured with ECBQ scales. Child imaginary play was measured with a scale from the ITSEA.

Parental Anxiety. Parents were classified as likely to have an anxiety disorder if they met criteria for high anxiety based on either one of two questionnaires. The Social Phobia & Anxiety Inventory (Turner et al., 1996) was used to measure probable SOC in the mothers by using the recommended cutoff of a difference score ≥80. This questionnaire has been widely used and well validated (Beidel et al., 1989, 1993). Because this questionnaire was introduced into the study after some subjects had finished their participation, only 59 parents completed it. The mean of the difference score for the present sample was 36.9 (SD = 24.5), which is slightly above the cutoff for "social phobia unlikely" (<34).

The state subscale from the State-Trait Anxiety Inventory was also used to measure anxiety in the parents (Spielberger, 1983, 1985). Four parents did not complete this questionnaire. The mean for this subscale in all parents of the present sample was 31.8 (SD = 8.5), which is about 4 points lower than the mean given for working adults (Spielberger, 1983). Parents were identified as likely to have an anxiety disorder if their anxiety level met or exceeded the 90th percentile as identified in previous research (Spielberger, 1983).

Other Information. Additional *DSM*-oriented problem subscales were used to examine potential comorbidity between the modified diagnoses and other disorders. The Language Development Survey (Rescorla, 1989) and Ages and Stages Questionnaires (Bricker and Squires, 1999) were also completed by parents to obtain descriptive information concerning the subjects. These questionnaires have been validated (Rescorla and Achenbach, 2002; Squires et al., 1999). Because the Language Development Survey measures language up to 36 months, only 57 children were included.

The Committee on Human Research approved the study, and parents signed informed consent documents after being fully informed about the study procedures.

Data Analyses

For each dependent variable, an analysis of covariance (ANCOVA) was conducted with diagnostic classification as the independent variable and age and gender as covariates. Each ANCOVA contrasted two groups: the diagnostic group of interest and the nonanxious children. Because of missing data and sample size considerations, omnibus tests comparing multiple groups were not employed. The associations of the diagnoses with parental anxiety were examined using Fisher exact test.

RESULTS

Thirty-five children met criteria for no anxiety disorders of any kind, and 37 children met criteria for the *DSM-IV* or modified SOC or GAD diagnoses. As expected, all of the children who met the *DSM-IV* diagnostic criteria for a diagnosis also met the modified criteria for the same diagnosis. Of the 19 children diagnosed with $_{MOD}$SOC, 8 were also diagnosed with $_{DSM}$SOC. Of the 29 children diagnosed with $_{MOD}$GAD, 5 were also diagnosed with $_{DSM}$GAD. Eight children with $_{MOD}$SOC were also diagnosed with $_{MOD}$GAD. One child with $_{DSM}$SOC was diagnosed with $_{MOD}$GAD. Two children were diagnosed with both $_{DSM}$SOC and $_{DSM}$GAD. Because the criteria for $_{MOD}$GAD overlapped with the criteria for SP (because debilitating fears were part of both diagnoses), all of the children diagnosed with $_{MOD}$GAD were also diagnosed with

TABLE 2
Diagnostic and Nonanxious Group Means for Child Symptom, Socioemotional Functioning, and Temperament Measures

	$_{MOD}$SOC Mean (SD)	$_{DSM}$SOC Mean (SD)	$_{MOD}$GAD Mean (SD)	$_{DSM}$GAD Mean (SD)	Nonanxious Children Mean (SD)
Convergent validity measures					
Mother-reported anxiety symptoms (CBCL)[a]	3.50** (2.46)	9.01** (6.26)	2.70 (2.40)	6.20** (3.96)	1.43 (1.24)
Caregiver-reported anxiety symptoms (CTRF)[b]	2.25** (1.98)	2.69 (3.06)	1.47 (2.46)	2.83* (2.01)	0.86 (0.91)
Shyness (ECBQ)[c]	4.11** (1.43)	SS	NH	NH	2.34 (0.95)
Sociability (ECBQ)[c]	4.84* (1.17)	SS	NH	NH	5.90 (1.04)
Inhibition to novelty (ITSEA)[d]	1.33* (0.81)	SS	NH	NH	0.68 (0.58)
Fear (ECBQ)[e]	NH	NH	2.36 (0.64)	SS	1.99 (0.58)
General anxiety (ITSEA)[f]	NH	NH	.28** (0.20)	SS	0.14 (0.15)
Separation distress (ITSEA)[f]	NH	NH	.89* (0.36)	SS	0.65 (0.28)
Discriminant validity measures					
Enjoys cuddling (ECBQ)[g]	5.20 (.50)	SS	5.31 (.75)	SS	4.85 (.82)
Imaginary play (ITSEA)[h]	1.72 (.28)	SS	1.64 (.37)	SS	1.72 (.23)
Fine motor activity (ECBQ)[g]	1.60 (.40)	SS	1.80 (.48)	SS	1.81 (.74)

Note: Significance tests compare each diagnostic group to the nonanxious group, controlling for age and gender. The modified and *DSM-IV* groups here are defined as mutually exclusive within diagnostic type. $_{MOD}$SOC = modified social phobia; $_{DSM}$SOC = *DSM-IV* social phobia; $_{MOD}$GAD = modified generalized anxiety disorder; $_{DSM}$GAD = *DSM-IV* generalized anxiety disorder; CBCL = Child Behavior Checklist; CTRF = Caregiver Teacher Report Form; ECBQ = Early Childhood Behavior Questionnaire; ITSEA = Infant Toddler Social and Emotional Assessment; NH = no hypotheses were made about these relations; SS = sample too small ($N < 5$) because children with *DSM-IV* diagnoses were too old for the measure.

[a] 10 $_{MOD}$SOC, 8 $_{DSM}$SOC, 23 $_{MOD}$GAD, 5 $_{DSM}$GAD, 35 nonanxious.
[b] 10 $_{MOD}$SOC, 6 $_{DSM}$SOC, 21 $_{MOD}$GAD, 5 $_{DSM}$GAD, 27 nonanxious.
[c] 10 $_{MOD}$SOC, 32 nonanxious.
[d] 9 $_{MOD}$SOC, 32 nonanxious.
[e] 18 $_{MOD}$GAD, 32 nonanxious.
[f] 19 $_{MOD}$GAD, 32 nonanxious.
[g] 10 $_{MOD}$SOC, 18 $_{MOD}$GAD, 32 nonanxious.
[h] 9 $_{MOD}$SOC, 19 $_{MOD}$GAD, 32 nonanxious.
* $p < .05$; ** $p < .01$.

SP. Seventy-three percent of $_{MOD}$SOC children and 38% of $_{DSM}$SOC children met criteria for SP. Some children were also diagnosed with SAD (9% of $_{MOD}$SOC, 38% of $_{DSM}$SOC, 8% $_{MOD}$GAD). Table 1 shows additional patterns of comorbidity for the modified and *DSM-IV* diagnoses with CBCL and CTRF scale scores. In comparing the patterns of correlations of $_{MOD}$SOC and $_{DSM}$SOC, the patterns were similar (with the possible exception of oppositional defiant disorder). In contrast, the patterns of correlations of $_{MOD}$GAD and $_{DSM}$GAD differed, particularly with respect to anxiety.

As expected, the modified diagnoses were much more commonly applied to toddlers, whereas the *DSM-IV* diagnoses were much more commonly applied to preschoolers. Among the children receiving a SOC diagnosis, only 18% of the toddlers (2/11) received the *DSM-IV* diagnosis (and 82% the modified diagnosis), whereas among preschoolers, 75% (6/8) received the *DSM-IV* diagnosis (Fisher exact test, $p = .02$). A similar pattern was found for the children with a GAD diagnosis; only 8% (2/24) of these toddlers received the *DSM-IV* diagnosis compared with 60% (3/5) of preschoolers (Fisher exact test, $p = .02$).

Of the 54 children who were within the age range for the Language Development Survey, only 7 showed a language delay and 4 of these were nonanxious children. None of the $_{MOD}$SOC children showed a language delay. Ten children were identified with the Ages and Stages Questionnaires as showing delays, most in only one area. Nonanxious children and $_{MOD}$SOC and $_{MOD}$GAD children showed low levels of delays (3%–9%), whereas $_{DSM}$SOC and $_{DSM}$GAD children showed higher levels (20%–25%), but because of the small sample sizes, this represented only one child. No children with $_{MOD}$SOC were found to have personal-social problems with their families. In terms of parental diagnoses, four of the parents met criteria for a probable anxiety disorder, two of whom met questionnaire

criteria for SOC and two of whom met questionnaire criteria for high levels of state anxiety.

Table 2 displays the results of the analyses testing convergent and discriminant validity. Age and gender were entered first for every analysis and in general did not make significant contributions except in the following cases: older children were significantly more likely to show anxiety symptoms and fine motor activity than younger children and girls showed significantly more general anxiety, imaginary play, and fine motor activity than boys.

The hypotheses concerning $_{MOD}$SOC were fully supported (Table 2). For hypothesis 1, $_{MOD}$SOC children were significantly more likely to show anxiety symptoms and shyness/inhibition than nonanxious children. In support of hypothesis 2, $_{MOD}$SOC children did not show significant differences from nonanxious children in terms of enjoying cuddling, imaginary play, and fine motor activity. In support of hypothesis 3, of the $_{MOD}$SOC children, 30% had a parent with a probable anxiety disorder (3/10) compared with 3% of the nonanxious children (1/35; Fisher exact test, $p = .03$). None of the children with $_{DSM}$SOC had parents with a probable anxiety disorder (Fisher exact test, $p = 1.00$). However, the overall pattern of findings for $_{MOD}$SOC children was similar to the pattern of findings for $_{DSM}$SOC children because the analyses concerning anxiety symptoms were significant for both the $_{MOD}$SOC and $_{DSM}$SOC children.

In contrast, the hypotheses concerning $_{MOD}$GAD were generally not supported. In testing hypothesis 4, children with $_{MOD}$GAD were more likely to show anxiety symptoms and fearfulness but not at a statistically significant level. They were significantly more likely to show general anxiety and separation distress. In support of hypothesis 5, children with $_{MOD}$GAD did not show significant differences from nonanxious children in terms of enjoying cuddling, imaginary play, and fine motor activity. However, hypothesis 6 was not supported; for $_{MOD}$GAD, only two (8%) had parents with probable anxiety disorders ($p = .56$). None of the parents of children with $_{DSM}$GAD had a probable anxiety disorder ($p = 1.00$). In addition, the overall pattern of findings for $_{MOD}$GAD children was not similar to the pattern of findings for $_{DSM}$GAD children because the $_{DSM}$GAD diagnosis did demonstrate convergent validity with anxiety symptoms, whereas the $_{MOD}$GAD diagnosis did not.

DISCUSSION

These preliminary data provided initial evidence for modifying *DSM-IV* SOC criteria for toddlers but not for GAD criteria. For $_{MOD}$SOC, all of the convergent and discriminant validity results were in the predicted direction, and parents of $_{MOD}$SOC children also demonstrated more anxiety than parents of children who were not diagnosed with an anxiety disorder. Moreover, even though parents and caregivers were rating the children in different contexts, the results from both sets of raters supported the $_{MOD}$SOC diagnosis. Furthermore, the questions included in these ratings overlapped little with the $_{MOD}$SOC criteria, supporting true convergence rather than tautology. In addition, $_{MOD}$SOC showed a pattern of results that was similar to $_{DSM}$SOC, suggesting some similarity between the diagnoses.

In contrast, although $_{MOD}$GAD showed some convergent validity and good discriminant validity, $_{MOD}$GAD children did not have more anxiety symptoms or more anxious parents than children who were not diagnosed with an anxiety disorder. Moreover, $_{MOD}$GAD did not behave in a fashion similar to $_{DSM}$GAD, suggesting that $_{MOD}$GAD was not an appropriate downward extension of the GAD diagnosis for younger children.

Some researchers have considered GAD to perhaps not be clearly differentiated from other diagnoses (Breslau et al., 1987; Kendler et al., 1992). The findings with $_{MOD}$GAD in this research suggested that these diagnostic criteria would need further modification to be valid. To meet criteria for this disorder, only two fears were needed. Perhaps a higher level of fears was necessary to identify children with a more valid diagnosis. Moreover, researchers have described fears as differing from anxiety (Marks, 1987), and all children with $_{MOD}$GAD also met criteria for SP. Thus, $_{MOD}$GAD probably related more to SP than to GAD, which could also have accounted for the findings.

Another difference between $_{MOD}$GAD and $_{MOD}$SOC was in how the modifications were developed. $_{MOD}$SOC was created by considering research associating BI with SOC. In contrast, $_{MOD}$GAD was not formed based on developmental psychopathology research. Future diagnostic research could benefit from further examining the development of GAD. This could provide better information for GAD modifications.

The diagnosis of young children has been a controversial issue. Some clinicians have been concerned

that diagnosis of young children could prematurely label them and could discount the importance of primary relationships. Others have been apprehensive about distinguishing between normal variation in childhood and clinical diagnoses. For example, fears in childhood have been reported as common and frequently transient (Marks, 1987). Moreover, a temperament (e.g., BI), which represents normal variation in development, was used as the basis for modifying SOC. Despite these issues, the diagnoses differed from typical variation in several ways. $_{MOD}$SOC required that the anxiety persist for 6 months and occur in peer settings, not just with adults. Also, all of the $_{MOD}$SOC children in this sample demonstrated significant impairment. For example, the $_{MOD}$SOC children described in this study had great difficulties playing with new children. Frequently, they could not participate in play groups and classes. Many $_{MOD}$SOC children would not play at parties, eat in restaurants, or attend shows because of severe distress. $_{MOD}$GAD children also suffered. Some parents had tremendous difficulties settling these children to play during the day and to sleep at night. In some cases, children in both groups would miss learning opportunities because of their anxiety. For example, some of the children were not accepted into preferred preschools because of their anxious behaviors. More than half of the $_{MOD}$SOC children (56%) and $_{MOD}$GAD children (54%) experienced difficulties with school because of their symptoms.

Limitations and Directions for Research

In this research, the sample sizes were small and the sample was not representative of the general population. In addition, validity from multiple raters was limited to anxiety symptoms and the diagnostic interviews focused only on anxiety disorders, not including other types of psychopathology. Additional research should incorporate larger and more representative samples and the diagnosis of all types of psychopathology. Not only would this allow for greater information concerning the distribution of these diagnoses in the general population, but it would also provide additional insight concerning comorbidity of the anxiety diagnoses. Studying developmental factors in relation to the diagnoses would also be useful, including the impact of the child's experience (e.g., daycare versus exclusive home care), child physiology, and parenting.

Following guidelines for diagnostic validation (Robins and Guze, 1989), future research could thus include biological markers and laboratory studies, family history with diagnosis of the parents, long-term outcome, and treatment response. Other external validators that could be used include environmental risk factors, concurrent symptoms (that are not part of the diagnostic criteria being assessed), diagnostic stability, and course of illness (Kendler, 1990).

Another question that was not addressed in the present research was a threshold for the diagnoses. This topic has been a general issue for the field, with some researchers considering diagnostic criteria to be continuous and others focusing more on discrete categories (Waller and Meehl, 1998). Later research could also focus on determining whether a certain threshold should be met to make clear distinctions between children with and without psychopathology.

Clinical Implications

If $_{MOD}$SOC is validated with additional research, then the criteria could be incorporated within the *DSM*. Clinicians would then be able to identify and treat young children with this disorder. Specific treatments would need to be developed, but research could begin with treatments that are useful for older children with social anxiety. For example, clinicians could work with parents to expose the children to increasingly more challenging social activities. Longitudinal research concerning $_{MOD}$SOC and SOC could also provide support for incorporating the modified criteria into the SOC diagnosis for younger children.

By identifying and treating young children with anxiety disorders, clinicians would not only alleviate current suffering but also could prevent future psychopathology. Besides being at risk for the emergence of additional anxiety disorders, children with anxiety disorders have been shown to be at greater risk for later developing depression and other types of psychopathology (Cole et al., 1996; Woodward and Fergusson, 2001). Identifying and treating young children could thus prevent much suffering and psychopathology. Additional research is greatly needed to improve the identification and treatment of anxiety disorders in young children.

Disclosure: The authors have no financial relationships to disclose.

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Managing Medication in Schools R. Reading

Increasing numbers of children and young people are prescribed medication to be taken in school. This article discusses general principles of prescribing medication for use in school, specific conditions for which medicines may be prescribed, and the key role of nurses in liaison with schools. Decisions about prescribing medication for use in schools do not only depend on evidence of therapeutic effectiveness but need to take into account other social and educational benefits and harms that may occur when children need to use medication in school. **Archives of Disease in Childhood** 2005;90:1253–1255.