

Screening for Childhood Anxiety Symptoms in Primary Care: Integrating Child and Parent Reports

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ABSTRACT

Objective: Parents' concerns typically determine the focus of a primary care visit. This study examined which information is lost if child reports are excluded from screening for anxiety. It also explores the use in primary care of the Screen for Child Anxiety Related Emotional Disorders (SCARED) and the Pediatric Symptom Checklist (PSC-17). **Method:** Two hundred thirty-six children (8–12 years 11 months) and their parents completed SCARED and PSC-17 before a primary care visit occurring during discrete periods between June 1999 and March 2001. **Results:** Child reports yielded higher SCARED scores than parent reports (mean = 18.12, SD = 12.14 versus 14.43, SD = 10.34, $p < .001$). Somatic/panic and separation anxiety accounted for 73.8% of the excess score from children's reports. The level of parent-reported symptoms did not vary with demographics. Female gender and younger age predicted greater excess reporting by children. Parent and child scores were moderately to highly correlated ($R = 0.55$ total score; 0.40–0.58 subfactors). **Conclusions:** There are discrete anxiety domains in which children's reports are likely to yield more information than that of parents. This phenomenon is almost entirely attributable to variations in the level of symptoms reported by children. Studies are needed to design brief screening procedures that integrate parent and child reports and carry age- and gender-adjusted thresholds. *J. Am. Acad. Child Adolesc. Psychiatry*, 2004;43(11):1364–1371. **Key Words:** anxiety, anxiety disorders, primary health care, Screen for Child Anxiety Related Emotional Disorders, Pediatric Symptom Checklist.

There is increasing focus on enhancement of the role of primary care as part of the solution to the public health crisis presented by the unmet treatment needs of children with mood and anxiety disorders (Anonymous,

2000; Wells et al., 2001). Approximately 9% to 15% (Benjamin et al., 1990; Costello, 1989) of 7- to 11-year-olds in primary care settings meet the criteria for an anxiety disorder. However, the evidence is that screening for and diagnosis of mood and anxiety syndromes are not a routine part of primary care in the United States and Canada (Wren et al., 2003), that active treatment of pediatric mood and anxiety syndromes within primary care is uncommon (Rushton et al., 2000), and that referral to specialized mental health services is less common than for behavioral disorders (Costello and Janiszewski, 1990). An important research priority is the development of practical, validated procedures to enhance assessment for and specific recognition of pediatric mood and anxiety syndromes in primary care settings.

One challenge is determining how such procedures should make the best use of the reports of children and parents. It is well established that child and parent agreement for childhood emotional syndromes is low (Achenbach et al., 1987) and that children's self-reports

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yield higher scores for anxiety and depressive symptoms than parent reports (Edelbrock et al., 1986; Hodges et al., 1990; Verhulst et al., 1987). Parents are also less likely to be aware of, to disclose to the primary care clinician (Horwitz et al., 1998), and to see a need for services (Wu et al., 1999) for childhood internalizing syndromes compared with behavioral syndromes. It is parents, however, who usually determine when a child seeks health services, who are the traditional primary historians, and whose concerns typically alert the primary care clinician to psychosocial issues (Dulcan et al., 1990).

Kraemer et al. (2003) have noted that, as of the year 2001, despite approximately 70 studies in the literature examining multi-informant variability, the question remained unanswered of how to resolve discrepancies to obtain a more valid measure of child characteristics. They propose an approach that makes use of multiple informants selected for differences in the perspectives from which and the contexts within which they see the child. Parents and children have differing perspectives and access to different contexts, but how frequently children's reports are included in primary care screening for mood and anxiety disorders is unknown (although it appears that such screening regardless of respondent is uncommon) (Wren et al., 2003). Even at the stage beyond screening, when the subset of children believed to have psychosocial problems (approximately 18%) is assessed for the nature of the problem, child interview is used in no more than half of cases (Wren et al., 2003). The same study found that the determination by the primary care clinician that an internalizing syndrome was present was strongly associated with the use of child interview, although it was beyond the scope of the data to determine the direction of effect.

How important is the fact that parents' reports are predominant in the primary care assessment of child psychosocial problems? The answer in part depends on whether the data that are lost when the child's report is not included would influence critical triage or management decisions. Verhulst et al. (1987), in a study using semistructured research psychiatric interviews, noted that information from the child contributed little to overall clinical judgment based on information already available from the parents. However, they noted an exception in the area of child fears and anxieties in which crucial information may come from the child

alone. It is unclear whether these findings extend to the very different situation of brief screening in nonpsychiatric settings. The one other study of which we are aware that has looked specifically at child and parent reports of childhood anxiety in primary care (Benjamin et al., 1990) illustrates the challenge. One-year weighted prevalence for one or more *DSM-III* anxiety disorder in a sample of 300 children aged 7 to 11 years was 15.4% when diagnoses yielded by child and/or parent interviews were combined, but overlap was minimal: Rates yielded by parent and child interview each alone were 6.6% and 10.5%, respectively. The primary objective of this study was to contribute to this discussion by examining which information is lost if child self-reports are not included in primary care screening.

The data presented come from a sample of 236 children and their parents who each completed the Screen for Child Anxiety Related Emotional Disorders (SCARED) (Birmaher et al., 1999) during screening for a study examining the clinical epidemiology of childhood anxiety disorder in primary care. We expected to replicate findings that children report more anxiety symptoms than their parents ("excess symptom reporting by children") and that parent-child agreement is at best low to moderate (Birmaher et al., 1997). We hypothesized that there would be significant differences in the degree to which individual symptom subgroups contributed to excess symptom reporting by children, specifically that children would report more of the emotional components of anxiety (separation anxiety, generalized anxiety), whereas parents would report more of the behavioral consequences (school and social avoidance) (DiBartolo et al., 1998). There is evidence that the level and type of symptoms reported by children (Kashani and Orvaschel, 1990) and the level of parent-child agreement vary with demographics and clinical status (Barbosa et al., 2002; Renouf and Kovacs, 1994). We therefore also examined for such variation in our sample. Specifically, we hypothesized that older child age, level of parental concern about behavioral (externalizing) symptoms, and male gender would each have an independent additive effect in predicting a greater excess of anxiety symptoms reported by the child. This was based on our supposition that these factors would decrease the likelihood of parents being aware of the degree of the child's anxiety.

The SCARED forms part of the recent “second wave” of anxiety rating scales specifically developed to be suitable for children and youths rather than as downward extensions of adult scales (Myers and Winters, 2002). In outpatient psychiatric samples, it has shown promise as a screening instrument (Birmaher et al., 1997, 1999; Monga et al., 2000). To our knowledge, the current study is the first published report of the use of the SCARED in primary care and of the use of both child and parent report versions in a nonpsychiatric setting. Hence, a secondary objective is to take the opportunity to examine in a nonreferred primary care sample the distribution of parent and child scores, the level of parent–child agreement yielded by the SCARED, and agreement between the parent version of the SCARED and the internalizing subscale of the Pediatric Symptom Checklist (17-item version) (PSC-17) (Gardner et al., 1999).

METHOD

Setting and Procedures

The study was conducted at sites of the Children’s Community Care (CCC), the primary care network that is a subsidiary of Children’s Hospital of Pittsburgh. CCC, at the time of data collection, provided care for 110,000 children and adolescents in western Pennsylvania and employed 61 pediatricians in 14 practices. Sampling took place in suburban and rural sites of three practices during discrete time periods from June 1999 to March 2001. Procedures were approved by the Human Rights Committee of Children’s Hospital of Pittsburgh and the Research Committee of Children’s Community Care. At each practice, a member of the clinical staff who was known professionally to the principal investigator acted as primary contact (a pediatrician in two settings and a nurse practitioner in the third).

During her hours in the practice, the research assistant (RA) reviewed the schedule with the receptionist to identify children in the appropriate age range attending for both routine and “sick” appointments. As each child presented for the appointment, the RA approached the parent(s) (here used to mean parent or legal guardian), checked with parents for exclusion criteria, invited families to enter a study of screening for problems with anxiety and worries in children, and obtained informed parental consent and child assent. Forms were completed while families waited for the primary care appointment and took no longer than 15 minutes. As time in the waiting room was often only minutes, permission was sought from the practices and the Research Committee for the RA to, if necessary, join families who had started the process in the waiting room during the typically longer wait in the examination room. With this modification, approximately 85% of eligible families completed screening. Of 251 consenting subjects, 15 were excluded because the parent and/or child completed fewer than 38 of the 41 SCARED items.

Subjects

Two hundred thirty-six children aged 8 to 12 years 11 months who presented for primary care with an accompanying custodial parent or guardian. Exclusion criteria were (1) moderate to severe mental retardation; (2) pervasive developmental disorder/autism; (3) psychotic disorder; (4) acute injuries, fevers higher than 101°F, acutely life-threatening illness; and (5) inability of children or parents to complete the forms due to language or learning difficulties.

Measures

Child Anxiety Related Emotional Disorders (SCARED). The SCARED (Birmaher et al., 1999) is a symptom inventory using a 3-point scale designed to screen for *DSM-IV* anxiety disorder with child self-report (C) and parent report (P) versions, each consisting of 41 items that are identical, varying only in the substitution of you/your child. In studies using outpatient psychiatric samples (Birmaher et al., 1997, 1999; Monga et al., 2000), it showed good convergent and divergent validity compared with formal psychiatric diagnoses and/or structured psychiatric interview and with older and more widely studied screening scales. It yielded an optimal cutoff point (25) on the SCARED-C with a sensitivity of 71% and specificity of 67%, 61%, and 71% when discriminating between anxiety and nonanxiety, anxiety and depression, and anxiety and disruptive disorders, respectively. Finally, it yielded, via principal component factors analysis, five factors (somatic/panic, generalized anxiety, separation anxiety, social phobia, school phobia) with good internal consistency, test-retest reliability, and discriminative validity. Correlation coefficients (Pearson intraclass) for parent and child scores were low to moderate (total SCARED, $R = 0.33$; specific factors ranged from $R = 0.20$ for social anxiety to $R = 0.47$ for separation and school anxiety [$p < .001$ for all]). There are no published data on cutoff points for the SCARED-41 for community populations. Published reports of use in community samples come from two sources, neither of which gathered SCARED-P data: (1) Muris et al. (1998a,b) used a modified 66-item version in samples of Dutch school children that compared well with older self-report instruments and with structured interview, had acceptable reliability and a factor structure similar to that seen with shorter (38- and 41-item) versions in clinical samples. (2) Boyd et al. (2003) evaluated the SCARED-C-41 in African-American adolescents attending an urban parochial school, finding promising correlation with measures of anxiety and perceived self-worth but a different factor structure from that reported for younger, predominantly white children.

PSC-17. The PSC-17 was included to provide a measure of parent-reported behavioral symptoms and to place this sample in the context of the more than 18,000 5- to 15-year-old primary care attenders from the United States, Canada, and Puerto Rico recruited for the Child Behavior Study (CBS) (Gardner et al., 2000). The PSC (Jellinek et al., 1988) is a survey of child psychosocial functioning for completion by parents in primary care. It has been well studied in a range of settings and with samples that vary by ethnic and socioeconomic status (Murphy and Jellinek, 1988; Murphy et al., 1992). The original PSC consisted of 35 items with a 3-point response scale. A shortened version, the PSC-17, was developed via a cross-validated factor analysis of the large CBS primary care data set (Gardner et al., 1999). Using nonorthogonal (promax) rotation techniques, three conceptually coherent clusters of items were also identified: internalizing, attention, and externalizing (PSC-I, -A, and -E, respectively) that were substantively identical when analyzed separately for girls and for boys. Cronbach’s α

was high for each resulting subscale. Subscales were further validated against other parent report instruments in an outpatient psychiatric clinic. The PSC-I was compared with the SCARED, the PSC-E with the IOWA Conners Aggression scale, and the PSC-A with the IOWA Conners Inattention-Overactivity scale. Receiver operating characteristic curves were calculated to select cut points on the PSC-17 and the PSC-17 subscales that maximized sensitivities, specificities, and agreement with the other instruments; these cut points were used in exploratory analyses in the current study; however, because they have not been validated against other measures in primary care or community populations, they must be regarded as tentative.

Demographics. The demographic form was completed by parents and included the child's date of birth, gender, and race and parental education on the 7-point Hollingshead scale. The education level of the reporting parent was used for analyses.

Data Analyses

Descriptive Analyses. Means and standard deviations were calculated for continuous measures for the full sample and for demographic and clinical subgroups: dichotomizing age at 10 years, parent education at college/technical school graduation ($n = 119$, 50.4%) and PSC-E score at 7, the cut point derived from the CBS database (Gardner et al., 1999). Age of 10 years was chosen to roughly divide the sample into mid-elementary ($n = 81$, 34.3%) and peripubertal ($n = 155$, 65.7%) groups. Relative frequency data were calculated as to the proportion of children who fell at or above tentative thresholds for the SCARED-P and -C and for PSC-17 total and subscales.

Hypothesis Testing. Because symptom score data were not normally distributed, hypothesis testing was conducted using nonparametric methods. The core outcome variable (excess symptoms reported by child) was computed for the total SCARED-41 and for each SCARED factor by subtracting the parent report score from the child report score for each dyad. Parent-child differences in mean symptom scores for the total SCARED were evaluated using the Wilcoxon signed rank test and differences in the proportions of children placed in the tentative clinical range using the χ^2 test. Pearson intraclass correlation coefficients were calculated to assess agreement between scales. Concordance between scales or reporters as to clinical anxiety/internalizing status was estimated using the κ statistic. A multiple regression model was used to explore the predictive value of demographic and clinical variables as to the level of excess symptoms reported by children within parent-child dyads and included the following simple effects: child age, level of child behavioral symptoms by PSC-E, child gender, and education level of the responding parent. The relative contribution of each subfactor to total excess symptom reporting by children was examined, and a χ^2 test was performed to evaluate for significant between factor differences.

RESULTS

Sample

The sample was virtually equally composed of girls and boys (116 boys [51.1%], 112 girls [48.9%]). Mean age was 10.54 years ($SD = 1.47$). Race was predominantly white (white, non-Hispanic, 96.1%). Approxi-

mately half of reporting parents had completed a third-level degree (associate/technical degree or greater, 50.4%) and 24 (10.3%) a graduate or professional degree; only five (2.2%) had less than a high school education. Group demographics for boys and girls were similar as were parental reports of internalizing symptoms (PSC-I) (boys: mean = 2.12, $SD = 1.93$; girls: mean = 2.05, $SD = 2.30$; $Z = -0.92$, no significance, Mann-Whitney). Parental reports (PSC-E) of externalizing symptoms were somewhat higher for boys than for girls (mean = 3.14, $SD = 2.75$ and mean = 2.23, $SD = 2.67$, respectively; $Z = -2.98$, $p < .01$, Mann-Whitney) as was the total PSC-17 score (mean = 8.38, $SD = 6.08$ and mean = 6.81, $SD = 6.48$, respectively; $Z = -2.407$, $p < .05$, Mann-Whitney).

Parents (Table 1) reported global levels of psychopathology (PSC-17 total score) similar to those reported in the large CBS (age range, 5–15 years, $N = 18,045$) (Gardner et al., 1999) (PSC-17: mean = 7.70, $SD = 6.33$; CBS: mean = 8.4, $SD = 5.9$; $Z = 0.38$, no significance) and placed a similar proportion of chil-

TABLE 1
Distribution of SCARED-41 and PSC-17 Scores

	Mean (SD)	Clinical Range, % (N) ^a
SCARED-41-C	18.12 (12.14)	24.6 (58)
Somatic/panic	4.9 (4.4)	
Generalized	4.3 (3.6)	
Separation	4.0 (3.2)	
Social	3.3 (2.2)	
School	1.7 (1.7)	
SCARED-41-P	14.43 (10.34)	14.8 (35)
Somatic/panic	3.0 (3.0)	
Generalized	4.9 (4.1)	
Separation	2.6 (2.7)	
Social	2.6 (2.2)	
School	1.2 (1.5)	
PSC-17	7.70 (6.33)	14.8 (35)
Internalizing	2.1 (2.1)	13.6 (32)
Externalizing	2.71 (2.72)	11.0 (26)
Attentional	2.9 (2.8)	12.7 (30)
One or more PSC factor		25.0 (59)

Note: SCARED-41-C/-P = 41-item Screen for Child Anxiety Related Emotional Disorders, child self-report and parent report; PSC-17 = 17-item Pediatric Symptom Checklist.

^a At or above tentative thresholds derived from outpatient psychiatric populations: SCARED: child, 25; parent, 25 (possible range, 0–84) (Birmaher et al., 1999, 1997). PSC-17: total, 15 (0–34); internalizing, 5 (0–10); externalizing, 7 (0–14); attentional, 7 (0–10) (Gardner et al., 1999).

dren in the global clinical range (PSC-17: 14.8% and CBS: 12%, $Z = -1.31$, no significance). Mean scores for internalizing (PSC-I mean = 2.1, SD = 2.1 and CBS mean = 1.8, SD = 1.9) and externalizing symptoms (PSC-E mean = 2.71, SD = 2.72 and CBS mean = 3.8, SD = 2.8, $Z = 0.38$, no significance) were also similar to scores for the CBS sample. However, when compared with the CBS, parents in this sample placed more children in the tentative clinical range for internalizing symptoms (14.8% versus 10%, respectively; $Z = 2.43$, $p < .01$) and fewer in the tentative clinical range for externalizing symptoms (11.0% versus 17.0%, respectively, $Z = -2.44$, $p < .01$).

Parent and Child Reports of Anxiety Symptoms

Table 1 summarizes mean scores for each instrument and subscale and, where potential cut points are available, the proportion of children placed in the tentative clinical range. Children reported more anxiety symptoms than did parents (children: mean SCARED-41 score = 18.12, SD = 12.14; parents: mean SCARED-41 score = 14.43, SD = 10.34; $Z = -5.34$, $p < .001$ [Wilcoxon]). Child reports compared with parent reports placed more children in the clinical range derived from outpatient psychiatric samples (58 [24.6%] versus 35 [4.8%], respectively; $\chi^2 = 23.51$, 1df, $p < .001$ [Pearson]): Thirty-eight subjects (16%) were placed in the tentative clinical range by child report only. Seventy-fifth and 90th percentile scores from parent reports were 16 and 24, respectively, whereas from child self-reports, they were 29 and 35, respectively.

Agreement Between Scales

Parent-Child Agreement (SCARED). Parent and child SCARED scores were moderately to highly correlated (Pearson intraclass): total SCARED score = 0.55, social anxiety = 0.40, somatic/panic = 0.45, separation = 0.50, generalized = 0.52, school = 0.58 ($p < .01$ for all). Parent-child agreement as to whether the child fell in the clinical range derived from outpatient psychiatric samples was low ($\kappa = 0.3$, $p < .001$).

Parent-Report Forms (SCARED-P and PSC-I). Parent SCARED and PSC-I scores were highly correlated ($R = 0.70$, Pearson intraclass, $p < .01$). Agreement as to whether the child fell in the clinical range derived from outpatient psychiatric populations was low ($\kappa = 0.20$, $p < .001$).

Contribution of Anxiety Subfactors to Excess Symptom Reporting by Children

There was significant variation in the contribution of individual subfactors to excess symptom reporting by children ($\chi^2 = 91.16$, 4df, $p < .001$) (Fig. 1). Parents and children reported similar levels of generalized anxiety, whereas somatic/panic anxiety alone accounted for 43.3% of the excess symptoms reported by children and somatic/panic and separation anxiety in combination accounted for 73.8%.

Variations With Clinical and Demographic Factors in Excess Symptom Reporting by Children

Total Anxiety Score. The multiple regression model supported a modest predictive role for demographic factors on the level of excess reporting by the child ($R^2 = 0.079$, $F = 6.42$, 3df, $p < .001$). However only child age ($t = -2.69$, $p < .01$) and female gender ($t = 2.85$, $p < .01$) were significant independent predictors of greater excess symptom reporting by the child. These findings were largely explained by variation in the symptom score generated by children's reports (Fig. 2) (exact scores are available at the Journal's Web site [www.jaacap.com via the Article Plus feature] in Table 2: anxiety scores by clinical and demographic group). Parents' reports generated similar scores across groups,

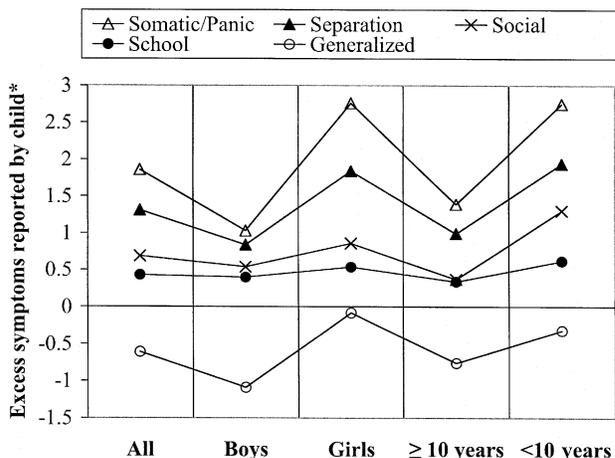


Fig. 1 Excess anxiety reported by children: by anxiety subfactor, age, and gender. *Mean difference SCARED-C minus SCARED-P. For full sample, $\chi^2 = 91.16$, 4df, $p < .0001$. If Generalized excluded, $\chi^2 = 41.09$, 3df, $p < .0001$. Overall pattern of variation across anxiety subfactors tended to hold true for each demographic subgroup, but degree of variation differed as illustrated (see Results, Anxiety Subfactors for discussion of regression analyses).

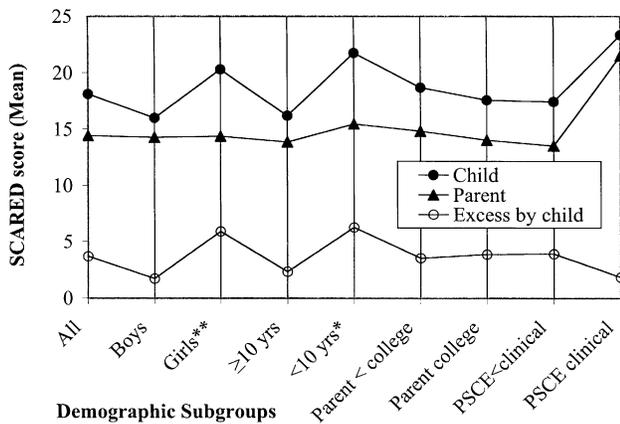


Fig. 2 Excess reporting by child by demographic subgroups. **Boys versus girls: $Z = -2.77, p < .01$; ≥ 10 years old versus < 10 years old: $Z = -2.47, p < .05$. Above PSC-E cut point versus below cut point: $Z = -0.45, NS$ (Mann-Whitney).

whereas the 75th and 90th percentile scores for child self-reports varied as follows: boys, 23 and 31, respectively; girls, 28 and 42, respectively; age 10 years or older, 22 and 31, respectively; aged younger than 10 years, 31.5 and 39, respectively. The exception was the group of children who fell in the clinical range on the PSC-E: Parents and children both reported more anxiety symptoms compared with children in the nonclinical range, but the degree of excess symptom reporting by children was similar. In total, 75.4% of excess symptom reporting was by girls (48.9% of sample) and 58.6% by children younger than 10 years of age (34.3% of sample).

Anxiety Subfactors. The overall pattern of variation in the degree of excess reporting with gender and age tended to hold true for each subfactor, but the degree of variation differed (Fig. 1) (exact scores are available at the Journal's Web site [www.jaacap.com via the Article Plus feature] in Table 3: excess reporting by child within symptom and demographic groups). The multiple regression model supported a modest predictive role for demographic factors for somatic/panic ($R^2 = 0.069, F = 8.30, 2df, p < .001$), separation ($R^2 = 0.075, F = 6.05, 3df, p = .001$) and social anxiety ($R^2 = 0.064, F = 7.7, 2df, p = .001$). Again, female gender (somatic/panic [$t = 3.42, p = .001$], separation anxiety [$t = 2.60, p = .01$]) and younger age (somatic/panic [$t = -2.42, p < 0.05$], separation [$t = -2.79, p < .01$], social anxiety [$t = -3.15, p < .01$]) were significant independent predictors of higher levels of excess symptom reporting by the child. For social anxiety alone, there was

an inverse relationship with the level of parent reports of externalizing symptoms (PSC-E scores: $t = -2.39, p < .05$). The education level of the reporting parent had no predictive value.

DISCUSSION

These findings support our hypotheses that there are discrete anxiety symptom areas in which children's reports are particularly likely to yield more information than parents' reports and that this phenomenon is better understood when variation with demographic factors is considered. Specifically, we found that the bulk of excess symptom reporting by children was for somatic/panic and separation anxiety (73.8%) and came from girls and younger children. Contrary to our expectations, there was no significant variation with demographic factors in the level of symptoms reported by parents: The phenomenon of variation in child-parent differences across demographic and symptom subgroups was almost entirely attributable to variations in the level of symptoms reported by children. Hence, it was those symptom groups (somatic/panic and separation anxiety) that were disproportionately reported by both girls and younger children that accounted for the bulk of excess reporting by children. It is noteworthy that, for generalized anxiety, there was neither significant child-parent differences for the full sample nor significant variation in child-parent differences with demographic factors. Also noteworthy is the unanticipated finding that levels of parent-child agreement as to anxiety score was moderate to high, in contrast to much of the literature on parent-child agreement (Kraemer et al., 2003) and to findings with the SCARED in psychiatric outpatient populations (Birmaher et al., 1997, 1999). The direction of this finding is consistent, however, with some previous research that reported higher levels of agreement in nonclinical compared with clinical populations (Barbosa et al., 2002).

There are several possible explanations for these findings, which may be working in combination. The relatively high correlation of parent and child report scores suggests that parents in this primary care setting may be more attuned to their children's level of anxiety than parents in clinical psychiatric settings and may also in part be explained by the fact that our sample was preadolescent and contained many children with rela-

tively few symptoms. Perhaps parents are making appropriate developmental and gender adjustments to their reporting threshold, in which case, the excess in somatic/panic and separation symptoms reported by girls and younger children might fall within the age- and gender-adjusted normal range and be without functional significance. Indeed, it has been recognized that, among child psychiatric disorders, the estimated prevalence rates for anxiety disorders are particularly sensitive to decrease if criteria for impairment are made more stringent (Shaffer et al., 2000). It is also possible that the setting—a doctor's waiting room—is especially likely to elicit situational separation and somatic worries in children. However, the epidemiological evidence is that there are true age and gender differences in the rates of anxiety disorder. Rates are higher for girls than boys (Anderson et al., 1989; Bird et al., 1989); in fact, it has been tentatively estimated that as early as 6 years of age, twice as many girls as boys will have experienced an anxiety disorder (Lewinsohn et al., 1998). Furthermore, there is evidence, at least in adolescence, that higher mean levels of anxiety symptoms reported by girls (Compton et al., 2000; Spence, 1997) may be closely linked to true anxiety disorder. One community study found that the gender difference in self-reported anxiety symptoms disappeared when adolescents with a current or past episode of an anxiety disorder were excluded (Lewinsohn et al., 1998). Rates of anxiety disorder are also known to increase with age, perhaps particularly with puberty (Essau et al., 2000). The lack of variation in parental reports with child age and gender is therefore of concern, especially in the context of evidence that boys and older children are more likely than girls and younger children to be identified by primary care clinicians as having a mood or anxiety syndrome (Wren et al., 2003). Children, particularly girls, may indeed provide clinically important information that might influence identification and management were it available to the clinician.

Limitations

This study did not include a gold standard determination of either primary care or psychiatric diagnoses or functional impairment associated with symptoms. Hence, although it helps define which information is most likely to be held uniquely by which children, it cannot answer the questions raised as to the true clinical significance of these findings. Similarly, although it

provides new information about the use of the SCARED in primary care, it cannot determine the optimal cut points for the SCARED in this setting and population. Finally, the demographics of the sample (96.1% white, non-Hispanic, 50.4% of parents graduates of third-level education), although reflecting well the suburban to rural western Pennsylvania population from which it was drawn, are not representative of all components of the national primary care population. Although the overall level of parent-reported child psychopathology is similar to that seen in a large North American primary care sample (Gardner et al., 1999), parents reported high levels of externalizing symptoms for relatively few children. This makes it possible that this study underestimates that impact of parental concerns about behavior on child–parent differences in reporting of anxiety symptoms. Indeed, it is possible that the focus of this study on screening for anxiety drew parents whose concerns were emotional rather than behavioral. We are currently conducting a similar study in a large, multiethnic, northern California system of care that will address these limitations.

Clinical implications

Our data lend support to the importance of including child self-report in screening for anxiety disorders in primary care settings but also illustrate the complexity of the task. Ideal screening and assessment protocols for primary care would draw from empirical data both the information most likely to be held uniquely by children and the clinical significance of such information. Such data could be used to determine which information and from which children should influence triage and management decisions and at which stage in the process leading from screening to triage to specific intervention. This would aid in the effective use of limited clinical time by (1) guiding the primary care clinician in the selection of which areas to explore directly, when, and with which children and (2) guiding the design of brief, efficient screening/diagnostic tools to supplement clinical interview that would (a) integrate both parent and child information and (b) carry age- and gender-adjusted thresholds. This report makes a step in the direction of the background work needed to meet this goal.

Disclosure: Dr. Birmaher is the author of *New Hope for Children and Teens With Bipolar Disorder: Your Friendly, Authoritative*

Guide to the Latest in Traditional and Complementary Solutions, *Three Rivers Press, April 2004*. Dr. Bridge has acted as a co-investigator (without financial support) on a research study supported by Forest Laboratories.

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