Preschool Anxiety Disorders in Pediatric Primary Care: Prevalence and Comorbidity

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Objective: We sought to establish prevalence rates and detail patterns of comorbidity for generalized anxiety disorder, separation anxiety disorder, and social phobia in preschool-aged children. **Method:** The Duke Preschool Anxiety Study, a screen-stratified, cross-sectional study, drew from pediatric primary care and oversampled for children at risk for anxiety. A total of 917 parents of preschool children (aged 2–5 years) completed the Preschool Age Psychiatric Assessment. **Results:** Generalized anxiety disorder, separation anxiety disorder, and social phobia are common in preschool-aged children attending pediatric primary care. Three-fourths of preschoolers with an anxiety disorder only had a single anxiety disorder. Generalized anxiety disorder displayed the greatest degree of comorbidity: with separation anxiety disorder (odds ratio [OR] = 4.1, 95% CI = 2.0–8.5), social phobia (OR = 6.4, 95% CI = 3.1–13.4), disruptive behavior disorders (OR = 5.1, 95% CI = 1.6–15.8), and depression (OR = 3.7, 95% CI = 1.1–12.4). **Conclusions:** The weakness of association between generalized anxiety disorder and depression stands in contrast to substantial associations between these 2 disorders reported in older individuals. Attenuated associations in preschool-aged children could translate into clinical opportunities for targeted early interventions, aimed at modifying the developmental trajectory of anxiety disorders. J. Am. Acad. Child Adolesc. Psychiatry, 2013;52(12):1294–1303. **Key Words:** comorbidity, pediatric primary care, preschool anxiety disorders, prevalence

The public health burden of psychiatric disorders in preschool children is a problem with a scope not well understood.[1-4] Over the last decade, studies of prescribing patterns in insurance databases have demonstrated dramatic increases in the prescription of psychotropic medications for preschool children.[5,6] This increase in psychopharmacologic treatment of young children has drawn attention to the neglected topic of diagnosis in the preschool years. Until recently, necessary epidemiological research on preschool mental health disorders was inhibited by the lack of reliable and valid assessment instruments. However, major advances have been made in the past decade with the development and psychometric testing of assessment instruments that map current nosologies such as *DSM-IV* and ICD-10 onto the symptoms and impairment of preschool children, as reported by parents and teachers. Psychometric testing has shown that such instruments are as reliable as those designed for older children, adolescents, and adults.[7]

In this article, we concentrate on preschool anxiety disorders. Many anxiety disorders have their onset in early childhood.[8] The limited research among preschool-aged children supports the notion that early childhood anxiety symptoms may cluster into diagnostic-specific groupings, similar to those found among older children.[9,10] Generalized anxiety disorder, separation anxiety disorder, and social phobia are thought to be among the most common, earliest-onset childhood psychiatric disorders, carrying substantial risk for anxiety disorders and depression in adulthood[11-15] and for continuing comorbidity and impaired quality of life throughout the lifespan.[16-19] To date, few studies of preschool-aged children, from reasonably representative samples, using structured psychiatric assessments with known psychometric properties, have reported on 1 or more anxiety diagnosis.[7,20-22] The range of prevalence estimates for generalized anxiety disorder reported in these

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studies is 0.6% to 6.5%, whereas prevalence estimates of separation anxiety disorder range from 0.3% to 5.4%, and social phobia range from 0.5% to 4.4%. Anxiety disorders are thought to be highly comorbid at all ages.[23] Comorbidity data from the preschool period remains limited with studies tending to report co-occurrence between broad categories of emotional and behavioral disorders.[24,25] Comorbidity, even in the preschool years, is perhaps expected, as population-based twin studies indicate that the genetic liability for specific anxiety disorders partly overlaps.[26,27] Egger *et al.*[7] reported that 8% of preschoolers met criteria for more than 1 psychiatric disorder. Of those children who met criteria for a disorder, 51.6% had a single type of disorder, 25.8% had 2, and 22.6% had 3 or more disorders. Wichstrom *et al.*[22] found that children with anxiety disorders had only moderately elevated odds of having comorbid disorders compared with children without anxiety disorders, with the rates of comorbid disorders ranging from 4% (for conduct disorders) to 12% (for depressive disorders).

Studies that establish prevalence rates and detail patterns of comorbidity for generalized anxiety disorder, separation anxiety disorder, and social phobia—3 of the most common earliest-onset, psychiatric disorders—would provide the basic information necessary for the establishment of formal mental health services for young children. Effective psychotherapeutic and psychopharmacological treatments have been developed for older children,[28] and younger children too could potentially benefit if we were able to develop a greater understanding of the presentation, prevalence, and specific patterns of comorbidity associated with these disorders. The Duke Preschool Anxiety Study aimed to do the following: establish prevalence rates for generalized anxiety disorder, separation anxiety disorder, and social phobia according to the *DSM-IV* criteria; detail patterns of comorbidity among generalized anxiety disorder, separation anxiety disorder, and social phobia; and examine the patterns of comorbidity among generalized anxiety disorder, separation anxiety disorder, and social phobia and other anxious or non-anxious disorders in preschool-aged children in pediatric primary care.

METHOD

Study Design

The Duke Preschool Anxiety Study is a screen-stratified, cross-sectional study with 3 phases: a primary care questionnaire screening phase; an in-home parent interview phase; and a laboratory-based case-control phase. The aim of this sampling strategy was to identify 250 children with and 250 children without anxiety disorders to participate in phase 3, a nested case-control study (total N = 500). The determining factor for this sample size was based on power calculations to obtain enough children with clinically significant anxiety disorders to produce reasonably narrow confidence intervals around the prevalence estimate of generalized anxiety disorder, separation anxiety disorder, and social phobia, and to examine patterns of comorbidity of these 3 disorders. Phases 1 and 2 are illustrated in Figure S1 (available online) and described in detail below. Data presented in this article focus on the phase 2 sample.

Phase 1: Screening

Screening took place over 45 months (January 2007–October 2010). We screened children aged 2 through 5 years attending Duke Pediatric Primary Care Clinics. Primary care pediatric clinic samples have a number of important advantages: rates of psychiatric disorder in randomly selected general pediatric primary care samples have been found to be similar to general population prevalence rates[29,30]; most preschool children see a pediatrician at least annually; and pediatricians see a large number of children per day, so collecting an adequate sample in a reasonable time is feasible.

Preschoolers scheduled for both well-child and sick-child visits on the specified recruitment day were identified using a tracking and scheduling system. When the child and the child's caregiver were in the examination room, the nurse asked the caregiver whether she or he were willing to speak with the screener regarding participation in a research study. If the caregiver agreed, the screener would obtain written consent from the caregiver and complete the screen.

Inclusion criteria were as follows: the child was between 24 and 71 months old; and the child attended the pediatric clinic during a screening period.

Exclusion criteria were as follows: the child was not accompanied by a parent/legal guardian who could provide consent; the parent/legal guardian did not have adequate fluency in English to complete the screen; the index child was known to have mental retardation (IQ < 70), autism, or other pervasive developmental disorders; the child's sibling was already participating in the study; or the provider decided that the child was too medically ill at the visit for the parent to be approached about the study. There is considerable evidence that children and adolescents with autism spectrum disorders are at increased risk for anxiety disorders.[31] We also acknowledge that mental retardation is woefully understudied. However, less than 1% (n = 21) of our screened sample was known to have an autism spectrum disorder and/or