CLINICAL PSYCHOLOGY
SCIENCE AND PRACTICE

COMMENTARIES

Commentary on Kerns and Kendall

Lawrence Scahill, Emory University

The dramatic increase in the detected prevalence of autism spectrum disorders (ASDs) in children over the past two decades is due, in large measure, to a broader case definition and more effective case finding. The similarities and differences in clinical presentation of ASDs and anxiety disorders have prompted great interest in anxiety in children with ASDs. In the absence of validated biological markers or diagnostic tests for anxiety disorders in this population, we rely on clinical observation, parent reports, and the child's verbal expression. The language and cognitive deficits in children with ASDs, however, hinder the application of assessments used in typically developing children. Because intervention research relies on reliable outcome measurement, better measurement of anxiety in children with ASDs is warranted.

Key words: **anxiety, autism, clinical trials, outcome measurement.** ***[Clin Psychol Sci Prac 19: 348–351, 2012]***

The most recent report from the Centers for Disease Control and Prevention indicates that autism spectrum disorders (ASDs) affect as many as 11 per 1,000 children in the United States (Centers for Disease Control and Prevention, 2012). Although these investigators used similar case finding methods in prior studies, the current estimate reflects a 78% increase in the estimated prevalence of ASDs over the past decade (Yeargin-Allsopp et al., 2003). The diagnostic criteria for ASDs were broadened with the publication of the *DSM-IV* (American Psychiatric Association, 1994), which has contributed to a rise in the detected prevalence. The accumulated effects of broader diagnostic criteria, improved assessment methods, and better case recognition appear to be the driving forces behind the steady increase in estimated prevalence of ASDs (Centers for Disease Control and Prevention, 2009). One implication of the broader diagnostic criteria and improved recognition is increasing heterogeneity in children with ASDs. In addition to the social disability, impaired communication, and repetitive behavior that define ASD generally, children with ASDs may also exhibit hyperactivity, aggression, tantrums, self-injury, sleep disturbance, and anxiety symptoms (Lecavalier, 2006; Research Units on Pediatric Psychopharmacology [RUPP] Autism Network, 2002, 2005; Sukhodolsky et al., 2008). The thorough review by Kerns and Kendall examines the co-occurrence of anxiety and ASD (Kerns & Kendall, 2012).

The presence of anxiety in children with ASDs has been noted for many years (see reviews in van Steensel et al., 2011; White et al., 2009). As in the current review, these previous reviews reported an extraordinary range of anxiety disorders in ASD samples—from 11 to 84%. This unsatisfying range is undoubtedly due to differences in sample size, source of the sample, and the assessment methods used. For example, across the 14 studies presented in the table by Kerns and Kendall (2012), sample sizes ranged from 40 to 1,800 and age of

Address correspondence to Lawrence Scahill, Marcus Autism Center, 1920 Briarcliff Rd., Atlanta, GA 30329. E-mail: lawrence.scahill@emory.edu.

subjects spanned from 3 to 57 years. Some of these studies used informant-based checklists with variable coverage of anxiety symptoms; others used more detailed clinical interviews. Most studies evaluated clinically referred samples, which are vulnerable to ascertainment bias. Although a few studies examined anxiety symptoms on a dimensional scale, most used a categorical approach. Using a dimensional approach, parent-rated anxiety in youth with ASDs was significantly higher than community controls (Gadow et al., 2005). This observation suggests that anxiety symptoms may complicate the clinical picture of youth with ASD—even if criteria for a specific anxiety disorder are not met. Sukhodolsky et al. (2008) used a version of the same measure developed by Gadow and colleagues in 172 subjects ascertained from two multi-site randomized medication studies. The study showed an orderly distribution on a 20-item, *DSM-IV*-based, parent-rated measure of anxiety. Some subjects were rated by parents with little or no anxiety, others with high scores, and most in between. High scores occurred in children in the normal range of IQ and among those with intellectual disability.

Alongside the observation that anxiety symptoms are common in children with ASDs, there is ongoing debate about whether the manifestations of anxiety in children with ASDs are the same or different from those observed in typically developing children (van Steensel et al., 2011; White et al., 2009). The underlying question is whether anxiety is part of ASD or separate from ASD. Kerns and Kendall (2012) take on these questions in a detailed and thoughtful way. The authors pose three "distinctions" in an effort to sort out anxiety in children with ASD. The first proposal is that anxiety disorders and ASDs are independent conditions that can co-occur. Second, anxiety disorders and ASDs may exist as separate conditions—but the combination may reflect an identifiable subgroup (presumably with specific treatment needs). Third, the presence of an ASD may increase the risk of anxiety disorders, which may explain the apparent high rate of co-occurrence. The authors go on to examine each of these proposals and argue there is support for each.

To state the obvious, we do not have empirically validated biological markers or definitive diagnostic tests for anxiety disorders or for ASDs in children. In the absence of validated biological markers or diagnostic tests for ASDs or anxiety disorders in pediatric populations, we rely on behavioral observations from informants and clinicians in combination with verbal expression of emotional distress by the child. In typically developing children, parental observation is supported by the child's verbal expression of worry—albeit with some differences by age. Depending on the age of the child, clinicians weigh the parental account of behavior and the child's description of emotional turmoil to make a diagnosis (Silverman & Albano, 1996). In children with ASDs, however, we face several challenges. First, in addition to age, children with ASD span a wide range of cognitive functioning from severely intellectually disabled to above average intelligence. Compared to higher-functioning children, children with cognitive and language delays may not be able to express worries about upcoming events or fears of harm coming to the primary caretaker when facing separation. Thus, in lower-functioning children, we are constrained to rely on parent report of the child's behavior without the aid of verbal expression. Even in higher-functioning children with language, however, children with ASDs may not have insight into the situations and events that induce uneasiness, and they may not label their feelings as anxiety. They may simply act out their anxiety.

Unfortunately for us all, this discussion is fraught with clumsy terminology such as comorbidity, noncomorbid cases, comorbidly affected cases, and monomorbid cases. The often used term *comorbidity* implies that the two disorders in question are indeed separate. As noted by Kerns and Kendall (2012), the coexisting condition (e.g., generalized anxiety disorder in a child with ASD) should resemble the disorder as it presents in typically developing children. Our current state of knowledge hinders any conclusions about the congruence of anxiety disorders in children with ASD and anxiety disorders in typically developing children. First, anxiety disorders in typically developing children are often *mixed* in clinical presentation. Typically developing children with one anxiety disorder often meet criteria for a second or third anxiety disorder (Walkup et al., 2008). Thus, the boundaries between anxiety disorders in typically developing children are not sharply drawn.

Second, available data suggest that obsessive-compulsive symptoms are fundamentally different in children with ASD compared with typically developing

children with obsessive-compulsive disorder (OCD). Typically developing children with OCD are distressed by their recurring thoughts and by the perceived need to perform rituals (Scahill et al., 2003). Common themes include fear of contamination or harm coming to the self or family members. These recurring fears prompt the performance of rituals intended to reduce the risk of harm. By contrast, repetitive behaviors such as watching the same video segment over and over, spinning objects, and repeating words or phrases are not resisted by children with ASDs and do not appear distressing (Scahill et al., 2006). Indeed, distress may only emerge when parents try to limit the preferred behavior. Moreover, selective serotonin reuptake inhibitors (SSRIs) are effective in reducing the severity of OCD symptoms in typically developing children with OCD, but the SSRI citalopram was no better than placebo in reducing repetitive behavior in a multi-site trial ($N = 149$) of youth with ASDs (King et al., 2009). These fundamental differences in the domain of repetitive behavior suggest that anxiety symptoms may not be the same in typically developing children and children with ASDs. Repetitive behavior in children with ASDs may not be driven by anxiety. Furthermore, despite the somewhat supportive statements offered by Kerns and Kendall (2012) about the use of SSRIs for the treatment for other anxiety disorders in children with ASD, close examination of available data does not support the efficacy of SSRIs in this population. Given the positive effects of SSRIs in typically developing children with anxiety disorders (Walkup et al., 2008), however, further study of this class of medications in children with ASD selected for moderate or higher levels of anxiety is warranted.

There are potential differences in other anxiety symptoms in children with ASDs and typically developing children. Typically developing children with generalized anxiety disorder fret about everyday issues such as homework, upcoming events, failure to measure up to expectations, and regret about perceived past failures. By contrast, children with ASDs often focus on routines. The apparent need for predictability gives rise to heightened vigilance, distress, and demand to adhere to the routine. Kerns and Kendall (2012) also note similarities and differences in specific phobias for children with ASDs and typically developing children.

Social phobia is yet another example with similarities and differences in symptom expression. Social avoidance and visible distress in social situations are hallmarks of social phobia in typically developing children. The same characteristics may be observed in children with an ASD. Social anxiety in children with ASD, however, may be secondary to social disability and repeated failure in social interactions with peers (Kerns & Kendall, 2012; White et al., 2009). In typically developing children with social phobia, social delay may be secondary to chronic social avoidance resulting in inadequate opportunity.

Anxiety disorders are common in children, and there is no reason to believe that children with ASD would be protected against anxiety disorders. Indeed, the social disability in ASDs may increase the risk of social phobia in children with ASDs. Therefore, the co-occurrence of anxiety disorders and ASD is of great interest—but they may or may not be independent. As noted above, the manifestations of anxiety in children with ASDs may be closely aligned with the autism phenotype (e.g., insistence on routines accompanied by vigilance and distress if routines are not followed). Thus, the three distinctions posited by Kerns and Kendall may all be correct.

Currently, two medications (risperidone and aripiprazole) are approved for the treatment of tantrums, aggression, and self-injury in children with autistic disorder (RUPP Autism Network, 2002; Marcus et al., 2009). The primary outcome measure in these trials was a parent-rated instrument that focused on these target symptoms (see Aman, Singh, Stewart, & Field, 1985). Given that children with one anxiety disorder often meet criteria for another anxiety disorder and the intermingling of anxiety with the core features of ASD, a dimensional approach to measurement seems more fitting than a categorical approach for application in clinical trials. The dimensional approach has been used in large-scale trials of typically developing children with anxiety disorders (Walkup et al., 2008). In that study, children with generalized anxiety disorder, separation anxiety disorder, or social phobia were included in a trial comparing cognitive behavior therapy (CBT) alone, the SSRI sertraline alone, and the combination of sertraline and CBT to placebo. Children with OCD were excluded. The effectiveness of study treatments in this sample of 488 typically developing children

appeared equal across anxiety diagnoses (Walkup et al., 2008). Children with ASDs may have language delays, cognitive delays, or both, which essentially preclude the use of self-reports. Moreover, children with ASDs may not be able to express worries or complaints about somatic symptoms and, therefore, may not be full participants in clinician-based interviews. Thus, there is a pressing need for a reliable and valid parent rating of anxiety symptoms in youth with ASDs that is also sensitive to change. To be useful across the full range of IQ, the rating should focus on observable behavior.

REFERENCES

Aman, M. G., Singh, N. N., Stewart, A. W., & Field, C. J. (1985). Psychometric characteristics of the Aberrant Behavior Checklist. *American Journal of Mental Deficiency*, *89*, 492–502.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Centers for Disease Control and Prevention. (2009). Prevalence of the autism spectrum disorders (ASDs) in multiple areas of the United States, 2004 and 2006.

Centers for Disease Control and Prevention. (2012). Prevalence of autism spectrum disorders—Autism and Developmental Disabilities Monitoring Network, 14 sites, United States, 2008. *Morbidity and Mortality Weekly Report*, *16*(3), 1–19.

Gadow, K. D., Devincent, C. J., Pomeroy, J., & Azizian, A. (2005). Comparison of DSM-IV symptoms in elementary school-age children with PDD versus clinic and community samples. *Autism: The International Journal of Research and Practice*, *9*, 392–415.

Kerns, C. M., & Kendall, P. C. (2012). The presentation and classification of anxiety in autism spectrum disorder. *Clinical Psychology: Science and Practice*, *19*, 323–346.

King, B. H., Hollander, E., Sikich, L., McCracken, J. T., Scahill, L., Bregman, J. D., & STAART Psychopharmacology Network. (2009). Lack of efficacy of citalopram in children with autism spectrum disorders and high levels of repetitive behavior. *Archives of General Psychiatry*, *66*(6), 583–590.

Lecavalier, L. (2006). Behavioral and emotional problems in young people with pervasive developmental disorders: Relative prevalence, effects of subject characteristics, and empirical classification. *Journal of Autism and Developmental Disorders*, *36*, 1101–1114.

Marcus, R. N., Owen, R., Kamen, L., Manos, G., McQuade, R. D., Carson, W. H., & Aman, M. G. (2009). A placebo-controlled, fixed-dose study of aripiprazole in children and adolescents with irritability associated with autistic disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, *48*(11), 1110–1119.

Research Units on Pediatric Psychopharmacology Autism Network. (2002). Risperidone in children with autism and serious behavior problems. *New England Journal of Medicine*, *347*, 314–321.

Research Units on Pediatric Psychopharmacology Autism Network. (2005). A randomized controlled crossover trial of methylphenidate in pervasive developmental disorders with hyperactivity. *Archives of General Psychiatry*, *62*, 1266–1274.

Scahill, L., Kano, Y., King, R. A., Carlson, A., Peller, A., LeBrun, U., … & Leckman, J. F. (2003). Influence of age and tic disorders on obsessive-compulsive disorder in a pediatric sample. *Journal of Child and Adolescent Psychopharmacology*, *13 S1*, 7–18.

Scahill, L., McDougle, C. J., Williams, S. K., Dimitropoulos, A., Aman, M. G., McCracken, J. T., … Vitiello, B. (2006). The Children's Yale-Brown Obsessive Compulsive Scales modified for pervasive developmental disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, *45*(9), 1114–1123.

Silverman, W., & Albano, A. (1996). *The Anxiety Disorders Interview Schedule for Children–IV (Child and parent versions)*. San Antonio, TX: Psychological Corporation.

Sukhodolsky, D. G., Scahill, L., Gadow, K. D., Arnold, L. E., Aman, M. G., McDougle, C. J., … Vitiello, B. (2008). Parent-rated anxiety symptoms in children with pervasive developmental disorders: Frequency and association with core autism symptoms and cognitive functioning. *Journal of Abnormal Child Psychology*, *36*(1), 117–128.

van Steensel, F. J., Bogels, S. M., & Perrin, S. (2011). Anxiety disorders in children and adolescents with autism spectrum disorders: A meta-analysis. *Clinical Child and Family Psychology Review*, *14*, 302–319.

Walkup, J. T., Albano, A. M., Piacentini, J., Birmaher, B., Compton, S., & Sherrill, J. (2008). Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *New England Journal of Medicine*, *359*(26), 2753–2766.

White, S. W., Oswald, D., Ollendick, T., & Scahill, L. (2009). Anxiety in children and adolescents with autism spectrum disorders. *Clinical Psychology Review*, *29*, 216–229.

Yeargin-Allsopp, M., Rice, C., Karapurkar, T., Doernberg, N., Boyle, C., & Murphy, C. (2003). Prevalence of autism in a US metropolitan area. *Journal of the American Medical Association*, *289*, 49–55.

Received November 12, 2012; accepted November 12, 2012.