Symposium Title: Clinical Presentation of Anxiety in Children with Autism Spectrum Disorder: Implications for Intervention

Chair: Cameron Neece, Ph.D

Discussant: Jonathan Weiss

Overview: Co-occurring anxiety symptoms and diagnosable anxiety disorders are common among youth with Autism Spectrum Disorder (ASD). This is concerning because elevated rates of anxiety in children with ASD are associated with negative outcomes for the person with ASD and their families. Recent research has supported the efficacy of cognitive-behavioral interventions for reducing the impact of anxiety in youth with ASD; however, much research is still needed to provide a clear characterization of anxiety in children with ASD across development and clarify how the clinical presentation of anxiety may impact intervention outcomes. The three papers in this symposium aim shed light on the clinical presentation of anxiety symptoms and disorders in children with ASD at different points in development and discuss the implications of differences observed for cognitive-behavioral interventions. The first paper by Chan and colleagues employs a sample of preschool-aged children with ASD and a typically developing control group to examine the prevalence of anxiety symptoms and DSM-5 anxiety disorders to determine whether rates are different between diagnostic groups and examine the symptom profile of anxiety in each diagnostic group. The second paper by Hepburn and colleagues examines anxiety symptoms profiles in youth with ASD and looks at child sex as a moderator of symptom profiles and response to a cognitive-behavioral intervention. The final paper by Albaum and Weiss examines the association between pre-treatment internalizing and externalizing symptoms and process factors in a cognitive-behavioral intervention for children with ASD who struggle with anxiety. Dr. Jonathan Weiss, Ph.D. will serve as the Discussant for this symposium. Dr. Weiss' research focuses on the prevention and treatment of mental health problems in people with ASD.

Paper 1 of 3

Paper Title: Examining the Prevalence and Symptom Profile of Anxiety Disorders in Three- to Five-Year-Old Children with and without Autism Spectrum Disorder

Authors: Neilson Chan1, Monica Vejar1, Katie Kallaci3, Marbella Rodriguez1, Cameron Neece, Ph.D.1

Introduction: Epidemiological studies indicate that children with Autism Spectrum Disorder (ASD) are at a high risk for developing co-occurring anxiety symptoms and diagnosable anxiety disorders, with prevalence rates ranging from 40% to 78% (Leyfer et al., 2006; Simenoff et al., 2008). The elevated rates of clinical anxiety among youths with ASD are concerning, given the many unfavorable outcomes associated with anxiety that may also exacerbate the symptoms already related to ASD (White et al., 2014). However, because most studies focusing on anxiety in this population include samples of children primarily starting at age 5 or 6, less is known about comorbid psychopathology during early childhood. In studies focusing on typically developing (TD) children, researchers have noted that early onset anxiety disorders tend to persist and can cause significant functional impairment later in life, with studies demonstrating that anxiety symptoms in preschool were the most robust predictor of anxiety disorders in middle childhood (Hudson & Dodd, 2012; Mian et al., 2011). Furthermore, only a few studies examining the prevalence and symptom presentation of anxiety in ASD have included a TD comparison group, which limits the conclusions readers can draw about the relative risks and differential expressions of symptoms associated with ASD. In the current study, we used a sample of preschool-aged children with ASD and TD to: (1) examine the prevalence of anxiety symptoms and DSM-5 anxiety disorders and determine whether rates are different between diagnostic groups, and (2) examine the symptom profile of anxiety in each diagnostic group.

Methods: Participants in our study included 61 children with ASD ages 3 to 5 year old, and 42 age-matched TD children (total n = 103). Families in the ASD group were recruited as part of a larger clinical trial examining the efficacy of a stress-reduction intervention for parents of children with ASD. The majority of children in the ASD group (72.9%) had an abbreviated IQ of 70 or less on the Stanford Binet 5. Parents completed the Spence Preschool Anxiety Scale (Spence et al., 2001), which yields a total

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anxiety score and five subscales (Generalized Anxiety, Social Anxiety, Obsessive-Compulsive, Physical Injury Fears, and Separation Anxiety). Parents were also administered the K-SADS to determine whether the child met diagnostic criteria for a DSM-5 anxiety disorder. Given the young age range of our sample, we considered only the following disorders: Separation Anxiety Disorder, Social Anxiety Disorder, Selective Mutism, Specific Phobia, Generalized Anxiety Disorder, and Other Specified Anxiety Disorder. Because those in the TD group had a significantly higher rate of Caucasian families, child race was included as a covariate in the analyses.

**Results:** Children with ASD in our sample were at a significantly higher risk of having any DSM-5 anxiety disorder on the K-SADS compared to those in the TD group (78.7% vs. 23.8%, respectively; $\chi^2(1) = 30.45, p < .001$), especially for Separation Anxiety Disorder (19.7% vs. 4.8%, respectively; $\chi^2(1) = 4.71, p < .05$) and Specific Phobia (65.6% vs. 14.3%, respectively; $\chi^2(1) = 26.47, p < .001$). ANCOVA analyses also revealed that parents of children with ASD rated their children to have significantly more severe total anxiety symptoms on the SPAS compared to the TD group ($F[1, 100] = 9.28, p < .01$), and especially on the Separation Anxiety subscale ($F[1, 100] = 11.42, p < .001$), Physical Injury Fears subscale ($F[1, 100] = 9.25, p < .01$), and Generalized Anxiety subscale ($F[1, 100] = 6.83, p < .01$). We also examined the symptom presentation of anxiety in children with and without ASD. The Spearman’s rank correlation coefficient on the endorsement frequency of anxiety symptoms on the SPAS for both groups was moderate ($\rho = .47, p < .05$), indicating that symptoms were endorsed at similar relative frequencies within the two groups. The most common Specific Phobias on the K-SADS for the ASD group included loud noises, needles, and the dark. Of note, among those with ASD who met criteria for a DSM-5 anxiety disorder, 50% met criteria for multiple disorders.

**Discussion:** This study sought to characterize the prevalence and symptom presentation of anxiety in a preschool-aged sample. Results of this study indicate that children with ASD exhibit more severe symptoms of anxiety and are at a greater risk for having a DMS-5 anxiety disorder compared to TD children. Consistent with the developmental psychopathology literature, the most prevalent disorders and symptoms for children in both groups are related to Separation Anxiety and Specific Phobias, and symptoms were endorsed at a similar relative frequency within both groups. However, there were notable differences in the specific phobias endorsed between the diagnostic groups. Specifically, the most frequently reported phobia on the KSADS for children with ASD was a fear of loud noises (e.g., vacuum cleaners, blenders, loud restaurants, etc.), whereas this was not a reported phobia for any children in the TD group. Future analyses will examine teacher data to provide a more comprehensive picture of the symptom presentation across multiple informants and settings. Additionally, we plan on examining possible risk correlates of anxiety in each diagnostic group in future studies.

**References:**


Paper Title: Different Anxiety Symptom Profiles in Male and Female Youth with ASD: Implications for Refining Cognitive-Behavioral Interventions

Authors: Susan Hepburn, Ph.D4, Emily Daniels, M.Ed., MSW4; Audrey Blakeley-Smith, Ph.D5 & Judy Reaven, Ph.D. 5

Introduction: Recent research has established the efficacy of cognitive-behavioral interventions for reducing the impact of anxiety in youth with ASD in both individual and group therapy contexts (Sukholdolsky, 2016). Although different manualized approaches are reported to promote meaningful gains for children and youth with ASD who participate in CBT, little is known about the characteristics of the youth with ASD who tend to benefit from cognitive-behavioral approaches. One of the sources of individual differences which may impact treatment responsivity is the sex of the youth with ASD. A growing body of literature suggests that males and females may present with distinct profiles of core autism symptoms and co-occurring psychopathology (Frazier et al., 2014; Halladay et al., 2015; Mandy et al., 2012; Werling & Geschwind, 2013). Understanding sex differences in symptom presentation and response to CBT intervention will inform individualization of treatment delivery in clinical settings.

Method: Seventy-five youth with confirmed ASD (55 males, 20 females; ages 8-18 years) and clinically significant anxiety from three consecutive clinical cohorts participated in a manualized, multi-family cognitive-behavioral group intervention at a university-affiliated clinic (i.e., Facing Your Fears; Reaven et al., 2012). Data were collected on parent and youth self-report of anxiety symptoms before and after the 12-14 week intervention using the SCARED and the Anxiety Disorders Interview – Revised. The Children’s Automatic Thoughts Scale (CATS) and the Behavior Rating Inventory of Executive Functions were also completed by the youth’s parents prior to treatment. Treatment response was operationalized through Global Clinical Impressions of anxiety severity and improvement over time, completed by experienced clinicians who were blind to the treatment condition (FYF or Wait-list) and timing of their anxiety assessments.

Results: There were no pre-treatment differences between males and females on chronological age (Males: mean = 150.6 months, sd = 27.4; Females: mean = 165.1 months, sd = 31.6); or full scale IQ (Males: mean = 105.98, sd = 15.22; Females: mean = 97.05, sd = 17.30). Subgroups were also comparable in maternal level of education, ethnicity and race. Pre-treatment scores on the SCARED did not differ by sex. Males and females showed distinct patterns of cognitive distortions as measured by the CATS. Specifically, males obtained significantly higher scores than females reflecting increased attributions of Hostile Intention toward others, $F(1,73) = 5.87$, $p = .018$; and females obtained significantly higher scores on perceived Social Threat, $F(1, 73) = 16.83$, $p < .000$. Approximately 86% of females and 68% of males showed significant improvement in anxiety symptom severity after the group intervention. More detailed analysis of specific anxiety symptom profiles and associations to core autism symptoms, executive function skills and treatment responsiveness are underway.

Conclusions: Preliminary analysis suggest that there are phenotypic differences in the type or quality of anxiety symptoms presented by male and female youth, even though the intensity or impact of anxiety appears to be comparable across both sexes in this help-seeking clinical sample. Implications for tailoring CBT interventions to males and females with differing profiles will be discussed.

References:


4 Colorado State University
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**Paper 3 of 3**

**Paper Title:** Correlates of Therapeutic Process in Cognitive Behaviour Therapy for Children with Autism and Anxiety

**Authors:** Carly Albaum⁶ & Jonathan Weiss⁶

**Introduction:** Cognitive behaviour therapy has been shown to be effective for children with autism and anxiety. Common process factors in therapy, such as therapeutic alliance, in-session engagement and program adherence outside of sessions, are important predictors of therapy outcomes for children, but may be influenced by child pre-treatment characteristics, such as internalizing and externalizing symptom severity (Karver, Handelsman, Fields, & Bickman, 2005). Research has yet to explore how symptom severity prior to beginning treatment is related to process factors in therapy for children with autism. Thus, this research aims to understand the association between pre-treatment internalizing and externalizing symptoms and process factors in a CBT intervention for children with autism who struggle with anxiety.

**Method:** Data were collected from 61 children with autism (90.2% male), who participated in a randomized controlled trial of CBT targeting emotion regulation. Children were 8 to 12 years of age (M = 9.70, SD = 1.23) with at least average IQ (M = 103.00, SD = 14.88, Range: 79-140). Predictors of process factors included parent-reported child internalizing and externalizing symptoms. Data for predictors were collected prior to beginning treatment. Process factors included therapist-reported homework completion and child involvement in therapy, as well as parent and child reports of the helpfulness of session tasks. An overall score for each factor was calculated by averaging ratings across all ten sessions. An observational measure (TPOCS-A) of therapeutic alliance between therapist and child (operationalized as task collaboration and bond) was also used by averaging observer ratings across four sessions.

**Results:** Homework completion was negatively related to child pre-treatment internalizing (r = -.34, p = .01) and externalizing symptoms (r = -.29, p = .03). Child externalizing symptoms were also negatively associated with child-reported helpfulness of sessions (r = -.25, p = .05) and therapist-child task collaboration (r = -.33, p = .02). Child internalizing symptoms were positively related to parent reports of the parent-therapist alliance (r = .30, p = .02). Internalizing and externalizing symptoms were not significantly related to parent-reported helpfulness of session tasks, therapist-reported therapeutic alliance and observational ratings of therapeutic bond between the child and therapist.

**Discussion:** Children who experience greater internalizing and externalizing symptoms prior to beginning therapy, as reported by parents, are less likely to complete weekly session homework. Children with greater externalizing symptoms may also be less likely to find session tasks helpful. Unexpectedly, therapists report stronger therapeutic alliance with parents who have children with more severe pre-treatment internalizing symptoms. Findings will be discussed within the context of current research examining process factors in treatment for children with autism. Future research is needed to understand how symptom severity prior to beginning treatment may impact the therapeutic process, and ultimately treatment outcome.

**References/Citations:**

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