Symposium Title: Optimizing Parent and Child Outcomes among Families of Children with Developmental Delay: The Role of Mindfulness-Oriented Interventions

Chair: Cameron L. Neece

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Overview: Parents of children with developmental delays/disabilities (DD) often report heightened levels of stress. Additionally, children with DD often experience behavioral and emotional difficulties (e.g., externalizing problem behavior, emotion dysregulation). The relationship between parenting stress and child problem behavior appears to be transactional. Interventions aimed at addressing parenting stress have shown spillover effects in decreasing child hyperactivity symptoms, and behavioral parent training interventions have been effective in reducing parenting stress. There are several areas of important inquiry including investigating the putative mediating roles of various parenting behaviors, incorporating stress reduction strategies into approaches to behavioral parent training, and examining how stress reduction programs affect parenting behaviors over time. The three presentations in this symposium will address some of the salient aspects of the relationships between parenting stress, parenting behaviors and qualities, and child outcomes among families affected by DD, as well as the emerging role mindfulness-oriented interventions play in improving both parent and child outcomes in this population. The first presentation will examine how changes in parenting stress predict changes in child emotion dysregulation through an empirically-supported stress-reduction intervention among parents of children with DD. The second presentation will address the role of Mindfulness Based Stress Reduction in improving parenting qualities and behaviors for parents of preschool-aged children with an identified delay or disability, as well as identify patterns of change in parenting in response to the intervention. The third presentation will evaluate the effects of a mindfulness-infused behavioral parent-training program for parents of children with ASD utilizing a concurrent randomized multiple baseline design. Taken together, these presentations highlight how mindfulness interventions may serve as an innovative approach to ameliorating parenting stress, improving parenting quality, reducing child behavior problems, and ultimately, optimizing outcomes for families of children with DD.

Paper 1 of 3

Paper Title: Parenting Stress and Emotion Dysregulation among Children with Developmental Delays: The Mediating Role of Parenting Behaviors

Authors: Neilson Chan and Cameron L. Neece

Introduction: Parents of children with developmental delays (DD) experience significantly higher levels of stress compared to parents of typically developing children (Baker, Blacher, Crnic, & Edelbrock, 2002). This is concerning, because parents who are highly stressed tend to exhibit more intrusive parenting and less sensitivity to their children’s needs, which can negatively impact their children’s development (Crnic, Gaze, & Hoffman, 2005). In particular, parenting behaviors that are more intrusive and less sensitive are highly predictive of greater child emotion dysregulation, which places these children at a higher risk for developing behavioral and social problems (Morris et al., 2007). Despite the findings that parents of children with DD consistently report higher levels of parenting stress, few studies have explored the relationship between parenting stress and child emotion dysregulation in this population. In the current study, we sought to better understand the relationship between parenting stress and child emotion dysregulation among families with children with DD by examining how changes in parenting stress through an empirically-supported stress-reduction intervention predicted changes in child emotion dysregulation. Further, we tested a mediational model by which parenting stress predicts child emotion dysregulation through the effects of sensitive and intrusive parenting behaviors.

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Methods: In the current study, we used data from the Mindful Awareness for Parenting Stress (MAPS) Project, which included 80 parents of children, ages 2.5 to 5 years old, with DD. These parents participated in a randomized controlled trial examining the efficacy of Mindfulness-Based Stress Reduction (MBSR) in reducing parenting stress and subsequent child behavior problems. Parents were assigned to an immediate treatment or a waitlist control group. Parenting stress was measured using the Parenting Stress Index-Short form (Abidin, 1990). Families participated in filmed parent-child interactions, which were used as observational measures of intrusive and sensitive parenting (Parent-Child Interaction Rating Scale; Belsky, Crnic, & Woodworth, 1995), as well as for child emotion dysregulation (Dysregulation Coding System; Hoffman, Crnic, & Baker, 2006). Data for each variable were collected at baseline and post-treatment.

Results: We conducted a hierarchical linear regression to examine whether changes in parenting stress through MBSR would predict changes in emotion dysregulation among children with DD. Results indicated that after controlling for baseline child emotion dysregulation and parenting stress, post-treatment parenting stress significantly predicted child emotion dysregulation ($\beta = 0.27, p < .05$). Further, we conducted a multiple mediation analysis using bootstrapping to determine whether sensitive and intrusive parenting mediated the relationship between parenting stress and child emotion dysregulation. Results indicated that only intrusive parenting significantly mediated the relationship between parenting stress and child emotion dysregulation ($ab = 0.01, p < .05$). Sensitive parenting was not found to be a significant mediator ($p > .05$).

Discussion: To the author’s knowledge, this study was the first to explore not only the impact of parenting stress on emotion dysregulation among children with DD using an experimental design, but also the mechanisms through which these processes occur. Our results suggest that reductions in parenting stress through MBSR were associated with reductions in child emotion dysregulation. Further, parenting behaviors (i.e., intrusive parenting) may mediate the relationship between parenting stress and emotion dysregulation among children with DD. With a growing body of research suggesting that the family context plays an integral role in a child’s development (Crnic & Neece, 2015), this study reiterates the finding that parenting stress remains a salient risk factor in the development of emotional and behavioral difficulties in children with DD. As a highly vulnerable population in great need of intervention, this study suggests that early intervention with parents of children with DD may have a spillover effect for the child. In particular, by intervening with parents’ stress, we may be able to reduce intrusive parenting behaviors, and thereby reduce the rates of emotion dysregulation and subsequent psychopathology that are common among children with DD.

References/Citations:
**Introduction:** Parenting has long been an area of interest in empirical research due to its imperative role in predicting child outcomes. Parenting behaviors may play a critical role both at particular points during development (e.g. the preschool period), and for specific at-risk populations (e.g. children with developmental delay), and, as such, appear to be of salience for developmental outcomes in these situations (Blacher, Baker, & Kaladjian, 2013; Brown et al., 2011). Research has evidenced particular parenting-related factors (e.g. parental affect, sensitivity, attachment/detachment, intrusiveness, parenting styles) as playing a key role in a range of developmental outcomes including behavior problems, emotional and cognitive functioning, health status, attachment, adaptive behavior skills, readiness for school, social competence, and overall psychosocial functioning (Cnnc et al., 2005; Dyches et al., 2012; Landry et al., 2001). Furthermore, elevated levels of parenting stress have been implicated in having a negative impact on both parenting behaviors as well as child outcomes; however, few interventions target improvement of these factors by means of reducing the stress experienced by these parents. Additionally, little is known regarding the differential impact such interventions may have for parents and the trajectories of their parenting behaviors at varying points in time. Given the salience of parenting in predicting child outcomes, the aims of the current study are twofold: 1) to examine whether a Mindfulness Based Stress Reduction (MBSR) intervention proves effective in improving parenting, and 2) to identify patterns of change in parenting in response to a stress-reduction intervention.

**Methods:** The current study involved data from the Mindful Awareness for Parenting Stress (MAPS) Project, which was conducted in 2 phases and included 91 parents of children, ages 2.5 to 5 years old, with DD. These parents participated in a randomized controlled trial examining the efficacy of MBSR in reducing parental stress and subsequent child behavior problems. To examine whether the MBSR intervention improves various parenting factors (Aim 1), Multivariate Analysis of Variance (MANOVA) was utilized examining both observational video coding and parent-report data. The independent variable of interest was treatment group (immediate treatment vs. delayed treatment) and the dependent variables were: 1) the six categories of parent qualities and behaviors outlined by the Parent Child Interaction Rating System (PCIRS) including Positivity, Negativity, Sensitivity, Intrusiveness, Detachment, and Cognitive Stimulation (Belsky, Crnic, & Woodworth, 1995), and 2) the Positive, Inconsistent, and Punitive parenting subscales of the Alabama Parenting Questionnaire-Preschool Revision (APQ-PR; Clerkin, Marks, Policaro, & Halperin, 2007). To identify trajectories of parenting from pre-treatment to post-treatment, and post-treatment to six-month follow-up (Aim 2), a semi-parametric group-based mixture modeling technique known as Latent Class Growth Analysis (LCGA) will be employed.

**Results:** Preliminary MANOVA analyses conducted utilizing the waitlist-control design indicated significant differences between the immediate treatment and the waitlist-control groups on one observational parenting quality on the PCIRS, Cognitive Stimulation \(F(1,63) = 5.94, p < .05\]) and two parent-reported qualities on the APQ-PR, Inconsistent \(F(1,63) = 4.19, p < .05\]) and Punitive Parenting \(F(1,63) = 4.06, p < .05\]). Trajectories of parenting over time will ultimately be examined using LCGA, and predictors of change in parenting and/or group membership for each trajectory will be examined to better inform group membership.

**Discussion:** To our knowledge, this is one of the first studies to investigate whether MBSR is an effective intervention for addressing parenting-specific behaviors among parents of children with DD as well as identify patterns of change in parenting over time. Preliminary analyses showed improvements in Cognitive Stimulation, Inconsistent Parenting, and Punitive Parenting behaviors for the immediate treatment group compared to the waitlist-control group. Demonstrating further evidence in support of these aims would lead to increased understanding of the potential impact stress reduction interventions have for parenting outcomes among families of children with DD as well as shed light on how parenting evolves over time in response to intervention. Additionally, looking at trajectories of parenting as opposed to average changes, and considering predictors of response to intervention will hopefully allow a more comprehensive picture of these processes to be elucidated with the overall goal of providing and/or developing more informed treatment. In turn, interventions aimed at reducing parenting stress can be used more widely to improve outcomes among families of children with DD, parenting interventions can be tailored to address the specific aspects of parenting that are most salient in order to increase adaptive parenting behavior while reducing negative parenting behavior, and ultimately, maximize child outcomes.
References/Citations:


Paper 3 of 3

**Paper Title:** Effects of a Brief Mindfulness-Infused Behavioral Parent Training for Mothers of Children with Autism Spectrum Disorder

**Authors:** Tracy J. Raulston³, Wendy Machalicek⁴, and Laura Lee McIntyre⁴

**Introduction:** Children with autism spectrum disorder (ASD) may display externalizing challenging behavior. Such challenging behavior has been found to be associated with heightened levels of stress for parents with these relations appearing to be bidirectional (Neece, Green, & Baker 2012). Families often experience barriers to accessing behavior analytic services for children including being placed on waitlists in many states (BACB, 2015). There is a need to evaluate brief behavioral parent training programs as these could possibly prevent challenging behavior and/or parenting stress from worsening. Programs that incorporate stress reduction strategies, such as mindfulness, may also increase a parent’s ability to be consistent with the application of behavioral principles and procedures within naturally occurring family routines.

**Methods:** A concurrent randomized multiple baseline across three mother-child dyads single-case design was employed to evaluate the effects of a three-week mindfulness-infused behavioral parent training program. Three mothers and their children (ages three, five, and eight years old) with autism spectrum disorder participated. Data were collected during naturally-occurring family routines (playtime with sibling, cleaning up toys, and dinner) on (1) percentage of intervals with behavioral strategy use (i.e., antecedent, reinforcement, and management strategies), (2) percentage of intervals with child challenging behavior, and (3) parent stress level as self-reported at the beginning of the family routine. The training was delivered in person, and mothers accessed homework (e.g., instructional videos, data collection online interactive forms) via a learning management system, and audio meditations via a downloaded mobile application. Non-experimental data were collected on parenting stress, depression, mindful parenting state, and social validity.

**Results:** Increases in parent behavioral strategy use and decreases in child challenging behavior were observed for two of three dyads. Self-reported distress decreased for two mothers, while an increase in distress was reported for one mother. Visual analysis combined with a standardized mean difference analysis (Hedge’s g) revealed mixed results, with a medium effect found

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for increases in behavioral strategy use ($g = 1.02$) and small effects found for decreases in parent stress ($g = .32$) and child challenging behavior ($g = .24$) at the study level. One mother qualified for follow-up coaching, which involved performance feedback that further increased the level of her independent use of behavioral strategies. All three mothers rated the social validity of the program favorably.

**Discussion:** We demonstrated that a brief mindfulness-infused behavioral parent training was effective in increasing behavioral strategy use and decreasing child challenging behavior for two of the three mother-child dyads. As was hypothesized, one parent needed performance feedback to increase behavioral strategy use to a desired level. The procedures described here focused on family routines-based intervention and could be implemented by early interventionists or behavioral health service providers. Such brief programs may hold promise for families who are waiting for more intensive interventions or for teams wanting to promote generalization of behavioral principles and strategies into the home setting. Future research should identify child, parent, and family characteristics that predict response to parent training intervention and utilize natural systems of change to deliver trainings.

**References/Citations:**