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**Special Issue Article**

**The Future of Developmental Psychopathology: Honoring the Contributions of Dante Cicchetti**

# The long and winding road: Pathways from basic research to implementation and evaluation

Sheree L. Toth[1,2], Catherine Cerulli[1,3,4] and Jody Todd Manly[1,2]

[1]Mt. Hope Family Center, University of Rochester, Rochester, NY, USA, [2]Department of Psychology, University of Rochester, Rochester, NY, USA, [3]Department of Psychiatry, Laboratory of Interpersonal Violence, University of Rochester, Rochester, NY, USA and [4]Susan B. Anthony Center, University of Rochester, Rochester, NY, USA

## Abstract

In this article, we celebrate Dante Cicchetti's extensive contributions to the discipline of developmental psychopathology. In his seminal article, he articulated why developmental psychopathology was imperative to create research portfolios that could inform the causes, consequences, and trajectories for adults often initiated by early lived experiences (Cicchetti, 1984). In this three-part article, we share our transdisciplinary efforts to use developmental psychopathology as a foundational theory from which to develop, implement, and evaluate interventions for populations who experienced early adversity or who were at risk for child abuse and neglect. After describing interventions conducted at Mt. Hope Family Center that spanned over three decades, we highlight the criticality of disseminating results and address policy implications of this work. We conclude by discussing future directions to facilitate work in developmental psychopathology. Currently, one of three national National Institute of Child Health and Human Development-funded child abuse and neglect centers, we look forward to continuing to build upon Dante's efforts to disseminate this important work to improve society for our children, our nation's often most vulnerable and forgotten citizens.

**Keywords:** Developmental psychopathology; implementation science; transdisciplinary

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## Introduction

With the arrival of Dante Cicchetti as the Director of Mt. Hope Family Center (MHFC) in 1985, we were poised to begin a journey of discovery that was unimaginable at the time. Dante was committed to transforming MHFC from a small preschool program serving maltreated children into a world class center building upon the principles of developmental psychopathology to inform basic research and provide evidence-based services to children and families affected by trauma.

In 1984, prior to arriving in Rochester, Dante had edited a Special Issue of *Child Development* devoted to developmental psychopathology. In his editorial, "The Emergence of a Discipline," Dante highlighted the historical roots that contributed to developmental psychopathology becoming a unique discipline and articulated why this was important for fostering research that ultimately could inform the causes, consequences, and trajectories initiated by early experiences (Cicchetti, 1984). In this seminal article, he begins by articulating the benefits of identifying certain areas of research as a unique discipline. He then defines the research, theory, methodologies, and models that form the foundations of the field. The article addresses the historical roots of other disciplines that contributed to the emergence of developmental psychopathology. Specifically, he argues that the fields of developmental psychology and of clinical psychology each needed to be well-established before their contributions could be unified under the umbrella of developmental psychopathology.

In this three-part article, we share our transdisciplinary efforts to create, implement, and evaluate interventions for vulnerable populations and those at risk for child abuse and neglect. At MHFC, we have had a long history of interdisciplinary work. However, over the past two decades, we have transitioned to a transdisciplinary approach, encouraging our colleagues from other disciplines to embrace a shared theoretical evidence-based approach across the course of training.

While we have focused on incorporating developmental psychopathology throughout our research activities, we also have a primary goal at MHFC to act as educators across clinicians' and researchers' professional lifespans (e.g., undergraduate and graduate students (e.g., psychology, medical, legal), post-doctoral students, as well as junior and senior faculty). This represents a journey of learning that we hope can benefit the next generation of researchers, clinicians, educators, and policy advocates devoted to promoting well-being and resilience in populations confronted by adversity. Importantly, we stress the criticality of translating the results of these and other investigations to the broader community of stakeholders who can benefit from this knowledge base. We conclude by identifying important new directions that can further advance the

**Corresponding author:** Sheree L. Toth; Email: sheree.toth@rochester.edu

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field. To begin, we highlight key tenets from developmental psychopathology that informed this work.

## Tenets of developmental psychopathology

From its inception, developmental psychopathology has proffered a conceptual framework for understanding the origins and addressing the consequences of child maltreatment. This guiding framework has contributed to identifying developmental periods that may be particularly salient for prevention and intervention (Cicchetti & Toth, 2017; Cicchetti, 1999; Toth & Cicchetti, 2013; Toth et al., 2011). The discipline's view of development as lying along a continuum from normative to atypical development reflects a significant divergence from historical categorical views of psychopathology. In fact, in the first edition of *Development and Psychopathology,* Cicchetti & Cohen (1995) organized the volumes around developmental processes rather than by diagnostic categories. This approach significantly predated more recent calls for the Research Domain Criteria (RDoC) approach. There are similarities and differences between the approaches to understanding psychopathology taken by developmental psychopathology and by the RDoC developers (Garber & Bradshaw, 2020).

Both perspectives aim to examine the range from normative to atypical development, to understand the origins and course of psychopathology, and to utilize a multilevel assessment strategy (Garber & Bradshaw, 2020). However, in a number of important ways, developmental psychopathology was a forerunner of RDoC. For example, while developmental psychopathology views the role of development within a transactional environmental context, development was not included in the original RDoC matrix but rather focused on psychopathology as brain-based disorders. Although RDoC evolved to recognize the role of development and the environment in the emergence of psychopathology (Garvey et al., 2016), it does not address how to integrate these aspects into the RDoC matrix.

The developmental psychopathology perspective is particularly relevant for its emphasis on the utilization of theory to guide the development of interventions that, once delivered, can reciprocally inform theory (Ialongo et al., 2006). Proponents of developmental psychopathology have clearly articulated the importance of understanding how the risk for psychopathology can be averted as they are in understanding what contributes to the emergence of maladaptation (Sroufe & Rutter, 1984). Because positive and negative developmental trajectories unfold over time, the developmental psychopathology perspective is critical to understanding the processes that underly pathways to positive and negative outcomes (Sroufe, 1990, 2009). Developmental psychopathologists maintain that in order to understand psychopathology, it is critical to first understand the course of normative functioning. This perspective is simply captured for anyone who has worked exclusively with a special needs population. Unless one also has a grasp on normative development, it is difficult to ascertain when a developmental pathway becomes more atypical.

Key tenets that are relevant to prevention and intervention include:

- normative and atypical processes should be considered in tandem
- developmental processes are not linear but reciprocal
- diversity in process and outcomes are essential principles of developmental psychopathology (Cicchetti & Rogosch, 1996). We know that similar adverse experiences can lead to diverse outcomes (multifinality) and that various types of adversity may result in similar outcomes (equifinality).

Importantly, proponents of developmental psychopathology have questioned beliefs about what constitutes mental health and mental illness. Specifically, the traditional perspective on immutable diagnoses is challenged as it does not recognize that adaptation and maladaptation occur as a dynamic process between individual and contextual factors. This approach is particularly relevant for prevention and intervention as it reduces stigma and offers hope that individuals struggling with a disorder are not doomed for life.

The criticality of understanding cultural influences on development across the life course also has been integral to the developmental psychopathology perspective. When applying a developmental psychopathology perspective to prevention and intervention, it is especially essential to consider the role of culture. Although it can be argued that the progenitors of developmental psychopathology were more invested in the importance of infusing biology into developmental psychology than in addressing the importance of culture, increased attention to the importance of culture emerged as the discipline matured (Causadias, 2013; Cicchetti & Toth, 2009). For example, a Special Issue of *Development and Psychopathology* was devoted to this topic (Coll et al., 2000). That being said, in 2013, Causadias highlighted a number of considerations in the successful integration of culture into developmental psychopathology. These include: 1) studying cultural development; 2) considering individual as well as social level processes; 3) examining the interplay between culture and biology; and 4) promoting improved and direct assessments of culture (Causadias, 2013). Considerations such as these are particularly relevant in the development, implementation, and evaluation of interventions. Too few evidence-based interventions have been developed with diverse racial and ethnic groups (Pina et al., 2019). The failure to include diverse populations in randomized control trials (RCTs) limits the likelihood that the models will be accepted by individuals providing services to groups not represented in the development of the evidence base. Additionally, even when found to be efficacious in RCTs, the model may not work equally for all service recipients. Thankfully, work addressing issues such as this has been undertaken (e.g., Anderson et al., 2019; Metzger et al., 2021).

## How randomized clinical trials informed developmental psychopathology

Integral to a developmental psychopathology framework is the conceptualization that understanding normative developmental processes informs comprehension of atypical developmental patterns and conversely, knowledge of atypical pathways can enhance understanding of the range of developmental trajectories that exists within a range of possible outcomes. Although ethical considerations preclude experimental manipulation of risk and protective factors, intervention research provides a naturalistic opportunity to examine which developmental processes are modifiable and what timing and processes for changing developmental trajectories might be optimal, thus further expanding our understanding of child and family development. With these goals in mind, Dante's leadership facilitated a number of RCTs that

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examined not only efficacy of clinical intervention models, but also explicitly included considerations for advancing the field of developmental psychopathology through incorporating multiple levels of analysis, including normative comparison groups to determine whether intervention could approximate a developmental pathway similar to lower risk groups, and integrating developmentally appropriate assessments that could also be sensitive to longitudinal follow-up to address changing trajectories over time. The goals of completing treatment evaluation studies also included translational research that could bridge the gaps between research and clinical audiences while informing understanding of child development more broadly (Cicchetti & Toth, 2006)

## Beginning the journey: The intergenerational effects of Child-Parent Psychotherapy

An early example of this approach incorporated knowledge of attachment and maternal depression research into an evaluation of Child-Parent Psychotherapy (CPP, Lieberman et al., 2015), a dual generation treatment that includes young children seen therapeutically in dyadic sessions with their parents. The research team's original concept to evaluate the efficacy of CPP was to utilize a real-world sample of economically challenged families who faced multiple risk factors that could exert a negative impact on child outcomes and family functioning. Reviewer feedback on this approach, however, suggested that an initial RCT should include a lower-risk sample to first determine whether CPP could be efficacious in modifying attachment security and improving child and family functioning before trying to tackle multiple risk factors simultaneously. The team obtained funding to evaluate an RCT with a middle-class sample of mothers who had experienced Major Depressive Disorders (MDD) since their children's births. This study, "Maternal Depression and Toddler Adjustment" (MDTA), was an important first step in contributing to the evidence base for CPP.

The design of MDTA included not only a depressed intervention group and a depressed treatment as usual comparison group, but also a comparison group of nondepressed mothers with no history of mental disorders to determine whether the outcomes of the intervention could approximate those of children who were not exposed to maternal depression. The results demonstrated important developmental consequences regarding the modifiability of attachment security. At age 18 months, the study provided evidence that children of mothers with depression were more likely to have insecure attachments at baseline, yet attachment could be modified with relationship-focused intervention. At the conclusion of the trial at age 36 months, children in the CPP intervention group improved their attachment security comparable to or better than those children who did not have mothers with MDD (Cicchetti et al., 1999; Toth et al., 2006). The disorganized attachment rates also significantly decreased in the CPP group, which provided early evidence that CPP could modify the most adverse category of insecure attachment. For those children and mothers who did not receive CPP, the depressed comparison group evinced significantly more stable insecure patterns (Toth et al., 2006). Additionally, children of mothers with depression in the nontreatment group showed a decline in cognitive functioning relative to those children who participated in CPP (Cicchetti et al., 2000). Thus, the CPP intervention was successful in ameliorating or preventing declines across multiple domains of development.

As these children developed, attachment insecurity during the preschool period also predicted increasingly negative representational perceptions of self and parent (Toth et al., 2009). The team followed these children up to age 9 years and found that improvements in attachment security mediated the relationship between baseline attachment security and CPP participation and subsequent peer relationships as assessed by teachers (Guild et al., 2017). Although prior research had demonstrated associations between insecure attachments in toddlerhood and subsequent difficulties in interpersonal relationships and social competence in middle childhood, this study was the first to show that specifically addressing attachment security during toddlerhood could produce enduring positive outcomes, not only within the parent–child relationship, but also in the broadening social networks as children move into middle childhood (Guild et al., 2017).

Following the completion of this study, Cicchetti and colleagues pursued the original goal of evaluating CPP with a higher risk population. Specifically, they recruited economically disadvantaged families who had experienced maltreatment. The design was expanded to include four groups, three of whom had involvement with the Child Protective Services (CPS) system and one comparison group that had no maltreatment histories. The three maltreatment groups were randomly assigned to CPP, a psychoeducational parenting intervention (PPI), or treatment as usual, which could include whatever services the families in the CPS system might have been referred to. Assessments were conducted at children's ages of 13, 20, 26, and 38 months. Once again, the results were striking. Both active intervention groups (CPP and PPI) demonstrated significant improvements in security of attachment, compared with limited change in the maltreated and nonmaltreated comparison groups (Cicchetti et al., 2006). At baseline, mothers in the maltreatment groups reported more histories of maltreatment in their own childhoods, more insecurity in their relationships with their own mothers, more parenting stress and maladaptive parenting attitudes, lower maternal sensitivity, and less family support that indicated significantly higher risk than in the nonmaltreatment comparison group (Cicchetti et al., 2006). By the end of the intervention at age 26 months, children in the maltreated comparison group continued to exhibit high rates of disorganized attachment, which suggested that usual treatment in the community was insufficient to ameliorate negative parent–child relationships in these families, whereas both the CPP and PPI interventions led to significant improvement in relationship security (Cicchetti et al., 2006). In a subsequent assessment 12 months post-intervention, however, only the CPP group maintained their improved attachment security, suggesting that to facilitate sustained positive parent–child relationships, an explicit focus on attachment security and trauma treatment was required, above and beyond addressing only parenting skills (Pickreign Stronach et al., 2013).

Additionally, a multilevel examination of intervention processes contributing to changes demonstrated that improvements occurred via reductions in maternal stress, although the models were related to different processes (Toth et al., 2015). In the PPI intervention, a focus on parenting skills led to decreases in parenting stress, whereas in CPP, decreases were evident in child-related stress. These differences are aligned with the treatment foci, in that addressing parenting skills reduced parenting stress, whereas addressing sensitivity to children's emotional needs reduced child-related stress.

CPP utilizes a dual generation approach to incorporating parents' histories of trauma and current challenges into building responsivity to children's needs and altering parental representations and possible distortions in the parent–child relationships. Our research demonstrates that this approach appears to be particularly potent in reducing stress related to perceptions of

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children's behaviors. The comparison groups, in contrast, reported increases in perceived stress as children moved into toddlerhood. These increases in stress were also reflected in physiological systems, with changes in maternal basal cortisol levels that were not evident in the intervention groups (Toth et al., 2015).

## Examining interpersonal psychotherapy

The subsequent iteration of examining the impact of maternal depression on offspring and parent–child relationships led to an evaluation of Interpersonal Psychotherapy (IPT, Weissman et al., 2000) for treating maternal depression to determine effects not only on mothers, but also on their children. MHFC researchers conducted this investigation with a sample of economically challenged, urban mothers and their 12-month-old infants. The results with this racially and ethnically diverse sample of mothers with multiple risk factors (such as extensive trauma histories) beyond depression demonstrated significant reductions in depressive symptoms, relative to a treatment as usual comparison group (Toth et al., 2013). These improvements were sustained and improved in a follow-up eight months later. The mediators of improved mental health were family social support and perceptions of stress (Toth et al., 2013). When including differential susceptibility of responsiveness to treatment by genetic moderation, however, changes in depressive symptoms depended not only on receipt of IPT, but also of genotypes (Cicchetti et al., 2015).

Determining whether genetic effects and responses to treatment differ in culturally diverse groups has critical importance for understanding which interventions work best for which individual and families. The research team sought to measure biological outcomes as well to understand at a physiological level how the interventions were working and for whom. Improvements following IPT on maternal depressive symptoms, perceptions of stress, and social adjustments were only demonstrated in women with protective versions (0 copies) of the corticotropin releasing hormone receptor CRHR1 TAT haplotype (Cicchetti et al., 2015). Similarly, African American women with depression with the LL genotype of the serotonergic neurotransmission gene 5-HTTLPR were more responsive to IPT, as evidenced by greater reductions in depressive symptoms (Cicchetti et al., 2015). This inclusion of molecular genetics in treatment evaluation studies is reflective of a developmental psychopathology prioritization of multiple levels of analysis to develop more comprehensive understanding of developmental processes (Cicchetti et al., 2015).

In addition to examining overall treatment effects in RCTs, the team aimed to identify processes contributing to parenting risks and mechanisms through which the intervention facilitated change. The MHFC team also considered how changes in one system or domain could influence other levels or domains, thereby potentiating a developmental cascade that could promote more positive family functioning and improved child outcomes over time (Masten & Cicchetti, 2010). For example, even prior to intervention, mothers with histories of maltreatment in their childhoods were found to be self-critical, and this self-view undermined their perceptions of efficacy as a parent (Michl et al., 2015). When examining the impacts of treatment on not only individual adult outcomes, but also parent–child relationships and offspring development, the study revealed that participation in IPT was associated with reductions in maternal depression that were subsequently associated with reduced attachment disorganization characteristics, improved maternal perceptions of temperament, and increased maternal parenting self-efficacy 8 months post-treatment, when the children were toddlers (Handley et al., 2017).

## Considerations in translating RCT outcomes into practice

In all of our RCTs, MHFC researchers partnered with clinicians and have been mindful of scientific rigor and incorporating as many gold-standard efficacy trial considerations as possible, including random assignment to groups, maintaining blindness to group assignment among research interviewers and coders, fidelity to intervention methodologies, and standardization of assessment tools and protocols. Despite this attention to methodological rigor, however, the research team also was mindful of real-world considerations and wanting to promote generalizability of results. Our treatment evaluation studies, therefore, had an effectiveness aspect despite being efficacy trials. For example, the teams conducted RCTs in a university setting that was also a clinical center, more like a community clinic, and therapists were trained clinicians rather than graduate students. The selection criteria minimized exclusions as much as possible, including comorbid diagnoses and multiple risk factors (e.g., economic challenges, high crime neighborhoods, limited transportation and childcare, etc.). We typically included populations that were not treatment seeking rather than convenience samples or those requesting services at an outpatient clinic. These approaches required considerable outreach and flexibility to engage and retain participants, including providing transportation to appointments and/or providing research visits or therapy appointments in home or community locations. The tension between scientific rigor and realistic constraints sometimes led to important lessons learned.

One reality was that despite wanting to include comprehensive research assessments that tapped multiple domains of child and adult functioning across multiple levels of analysis that could be followed over time, extensive time commitments for research batteries led to attrition and missing data as families' lives precluded participation for numerous hours of research assessments. Researchers must prune research batteries to reduce participant burden. Additionally, over the course of our RCTs we also learned that seeking input from constituent groups regarding recruitment materials and aspects of the measurement batteries ultimately facilitated the conduct of the studies.

In MHFC's early RCT addressing maternal depression (MDTA), we planned to provide an 18-month course of therapy with the goal of transitioning offspring from early toddlerhood to age 3 years. Our maternal participants attended approximately half of planned sessions, clearly voicing their concerns over the amount of time required. Moving forward, the intervention time offered became shorter, and we are continuing to assess duration of treatment in our most recently completed RCT.

Another example from one of the maternal depression IPT studies described above (Handley et al., 2017) was that although the original research question included whether focusing on maternal depression specifically (via IPT) was sufficient to improve parent–child relationships and children's outcomes or whether additional intervention (with CPP) was necessary to improve attachment security and alter children's developmental trajectories, we encountered barriers in completing the original aims of the project. The scientifically rigorous plan was to provide a course of IPT initially and then transfer families to a new therapist to provide CPP so that there would not be contamination between the two treatment models and each could be delivered with strict fidelity. The participants, however, were uncomfortable with starting a new

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course of treatment with an unfamiliar therapist, and they tended to drop out as the second phase was scheduled to begin. We were able to evaluate the IPT portion, but we were unsuccessful in administering CPP with enough participants such that the original research question could be examined.

In a different approach, we began with more of an effectiveness approach to our evaluation of Building Healthy Children (BHC), a program designed to support adolescent parents and their babies. The project began with strategic planning by United Way and our county Department of Human Services (DHS) to prioritize intervening early to support young families to prevent them from entering the child welfare system. Although in prior years both DHS and United Way had been skeptical of research approaches such as random assignment, over time they came to appreciate that if a program had limited capacity to meet the needs of all families, rather than creating a de facto waiting list on a first-come-first-serve basis, random assignment could actually utilize the natural limitations in a strategic way, and there could be lessons learned by employing a more scientific approach to determine outcomes. Thus, the team was able to obtain funding to evaluate the BHC program to determine its effectiveness. The target population was mothers who gave birth to their first child under the age of 21, who were eligible for public assistance, who had no more than two children, and who were not already in the CPS system. The program was designed to be comprehensive with a team approach: each family was assigned to a Community Health Worker (CHW), who could assist with concrete service needs, and a mental health therapist. The therapists were cross trained in three evidence-based treatment models designed to address common challenges for teen parents: Child-Parent Psychotherapy (CPP, child and family trauma), Interpersonal Psychotherapy (IPT, parental depression), and Parents as Teachers (knowledge of child development). The program partnered with several pediatric and family medicine practices, and the CHWs communicated with medical teams via electronic medical records in the families' medical homes, and they facilitated transportation and follow-through with medical appointments. By addressing concrete service needs for housing, education, employment, food, baby supplies, etc., the therapists were better able to focus on delivering behavioral health support with fidelity to the treatment models without being derailed by multiple complex family needs. Families were able to continue their involvement in BHC until their children turned 3 years of age, and this duration of services supported the outreach that was needed to engage young parents, the rapid developmental changes that occurred in the first three years of life, parents' developmental needs (e.g., some parents began in the program at age 14), and changing treatment needs over time (e.g., parents who needed support with postpartum depression initially and then subsequently experienced intimate partner violence or other trauma could receive IPT followed by CPP). Because the CHWs were drawn from similar communities as the families and many had been young parents themselves, attention to cultural and racial sensitivity and outreach were built into the program and facilitated engagement with young families who primarily identified with marginalized groups. Utilizing a home visitation approach and flexible service delivery helped to reduce stigma and challenges to service access.

Evaluation of BHC participants, when compared with families who received screening and referrals for services rather than the comprehensive BHC package, demonstrated that BHC intervention families had significantly better compliance with well-child medical care and high engagement in services (Paradis et al., 2013). Subsequent analyses demonstrated that those receiving intervention demonstrated significantly lower depressive symptoms by mid-intervention assessments when children were 2 years of age and that these reductions in depression predicted lower parenting stress and greater parenting self-efficacy as well as less internalizing and externalizing behavior when children turned three (Demeusy et al., 2021). The mediational role of reducing maternal depression in improving parent and child functioning is similar to the results of the IPT evaluation (Handley et al., 2017), and underscores the importance of addressing parental mental health to ameliorate negative family outcomes. Analyses of outcomes for those families for whom we had CPS data demonstrated a significant difference between groups in indicated CPS reports, highlighting that the original goals of preventing CPS involvement through a comprehensive and intensive program designed to address a range of family needs could successfully facilitate a more positive trajectory for these young families.

A follow-up of BHC during school-aged years underscored the sustained benefits of the program over time and in a subsequent developmental period. Results obtained 3–7 years postintervention demonstrated that parents in the BHC group utilized significantly less inconsistent and harsh parenting than comparison families (Demeusy et al., 2021). Children in the BHC group were reported by both parents and teachers to have significantly less externalizing behavior problems, and parents rated children as having lower internalizing behavior problems as well (Demeusy et al., 2021). These findings are especially compelling, given the longitudinal design of the study and the multi-informant approach in which teachers, who had no knowledge of families' service histories, rated children who participated in BHC during infancy and toddlerhood more positively than those who received only screenings and referrals. Although the relative contributions of the treatment components could not be determined independently, the flexibility of having a menu of treatment options that could be tailored to the needs of individual families was acceptable to families and led to positive changes over time.

## Identifying optimal timing for prevention and intervention

The results of MHFC's intervention studies with young mothers highlighting the role of ameliorating depression in promoting positive outcomes led us to explore whether intervening earlier in intergenerational cycles could prevent mental health burden and improve developmental trajectories. Another IPT study was implemented, but rather than focusing on maternal depression, the study evaluated IPT for adolescents (IPT-A, Mufson et al., 2004) with girls in the 13–15 year age range. Because adolescent girls are at heightened risk for depression and because child maltreatment can exacerbate depression risks, intervening with depressed teens with and without maltreatment had potential to prevent cascading risks that could potentiate maladaptive intergenerational patterns by providing supports during a critical developmental period. Additionally, examining characteristics related to responses to intervention could identify strategies that could be implemented with diverse populations and marginalized individuals who may fall through the cracks with current access to services. The study included girls with subsyndromal or mild depressive symptoms, with the goal of preventing MDD. The design included girls with and without histories of child maltreatment, as well as a nondepressed, nonmaltreated comparison group to determine whether participants in the intervention achieved outcomes comparable to a more normative lower-risk

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population. All participants were drawn from economically challenged families in urban neighborhoods. Girls with depressive symptoms were randomly assigned to either IPT-A or an enhanced community standard (ECS) treatment that was comparable to supportive counseling, but which also included outreach and home visitation to maintain retention with this non-treatment-seeking group.

Even at baseline, several important themes emerged. When recruitment outreach was conducted to assess for depressive symptoms among non-treatment-seeking youth, many adolescent girls reported depressive symptoms and 30% of the participants reported suicidal ideation, and in many cases, they had not told anyone about their symptoms of depression, suicidal thoughts, or even suicide attempts. Without depression screenings, there may be countless young people who have these experiences who are not being identified by mental health providers and not connected with services. The surges in youth mental health needs and increasing rates of youth suicide may be reflective of these gaps in acknowledging and addressing youth mental health concerns. Child maltreatment was significantly associated with suicidal ideation, and experiencing recent interpersonal stressors exacerbated this association (Duprey et al., 2021). The quality of mother–daughter relationships and mother–daughter conflict independently mediated the association between a history of child maltreatment and subsequent suicidal ideation, above and beyond the role of depression in increasing suicide risk (Handley et al., 2017). An association was also found between maternal histories of maltreatment and subsequent adult intimate partner violence (IPV) as well as adolescent maltreatment, and maternal IPV partially mediated this intergenerational transmission of maltreatment (Adams et al., 2019). The association between maltreatment histories and suicidal ideation was elevated for youth who were involved in adolescent dating violence, and these relationships often involved bidirectional violence (Adams et al., 2021). These intergenerational patterns of interpersonal difficulties and violence suggest that IPT, with an explicit focus on addressing relationship challenges, may be particularly impactful for maltreated youth. Another potential intervention focus is cognitive reappraisals, which appeared to be a protective factor that mitigated the association between stressful life events and suicidal ideation (Duprey et al., 2021).

When the results of the IPT-A intervention were analyzed by group, maltreatment histories were related to differential responses to the intervention (Toth et al., 2020). Girls without histories of maltreatment were equally responsive to IPT-A and ECS approaches. For girls who had experienced child abuse and/or neglect, however, IPT-A was more efficacious in alleviating depressive symptoms. The girls who benefitted the most from the intervention were those who had experienced multiple forms of maltreatment, and especially those girls with sexual abuse histories (Toth et al, 2020). Thus, the relational approach in the IPT-A intervention may be particularly important for youth whose relationships have been characterized by abuse. It should be noted that this group of girls faced considerable challenges and often endured additional traumatic events during the course of treatment. They included a majority of families from disenfranchized communities who likely experienced discrimination and oppression as well as poverty and community violence. They were not connected with services until the onset of the study, and they may have felt they that had few resources and supports. Although these young people had significant needs, they were not being reached by service systems, and without increased access to resources, these adolescents were likely to have negative developmental trajectories. Without addressing these needs, these girls could face negative trajectories that could result in intergenerational cycles of maternal depression and child maltreatment as these girls become parents. Although the study did not include males, similar risk trajectories could be evident in fathers as well.

Another approach to intervening early and exploring opportunities to change intergenerational patterns was included in our recent TRANSFORM National Center on Child Abuse and Neglect. This Capstone Center, funded by the National Institute on Child Health and Human Development, includes basic research with children who are being followed longitudinally into adulthood to examine long-term consequences of child maltreatment as well as treatment evaluation studies to examine the most efficacious approaches for prevention and intervention with affected families. An explicit focus on translating research to multiple audiences, disseminating knowledge learned, and supporting the next generation of researchers and professionals is incorporated into the TRANSFORM Center. An extensive data archive of decades of basic research and RCTs supports these young investigators and facilitates additional secondary analyses of existing data to examine new research questions.

An RCT within TRANSFORM was designed to evaluate CPP with pregnant people and assess the optimal timing of intervention (initiated during pregnancy or postpartum) and duration of services (6 versus 12 months). Although data collection has recently concluded and the intervention results are not yet available, the design of the study was drawn from our prior studies that highlighted the potential of this dual generation approach to address parental and child trauma and maltreatment histories and to build positive relationships and secure attachments during the early years of life to avert perpetuation of familial conflict and mental health challenges. Participants were recruited during pregnancy and assigned to one of four treatment groups: one group received CPP beginning in pregnancy with a 6-month duration, a second group began CPP during pregnancy and continued for 12 months, a third group had a 6-month course of CPP that began after the birth of their baby, and a comparison group that was referred to a CHW program. Consistent with a developmental psychopathology framework, the assessments include multiple levels of analysis to capture parental attributions, physiological regulatory mechanisms, and parental internal representations as potential mechanisms related to treatment over four time points that address transition to parenthood and infant development up to age 15 months. Because the pandemic occurred in the middle of the project, we pivoted to collect information about the impact of COVID-19 on family stress and functioning as well as expanding our method of delivery to include telehealth and measures that could be collected virtually if safety concerns prevented in-person participation.

Now that we have highlighted the results of the RCTs that have been conducted at MHFC for over three decades, we direct our attention toward considerations for the dissemination of research findings and policy implications.

## Dissemination and policy implications

Despite the important work in the field of developmental psychopathology conducted by MHFC and others, challenges in ensuring the translation of this work into everyday settings including, but not limited, to CPS, federally funded health clinics, court and law enforcement settings, school settings, and public

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defender and district attorneys' offices, continue. The financial, emotional, and physical costs associated with not understanding child and parent populations through a developmental lens are extensive. These costs have tremendous impacts on individuals nested within their familial relationships, their positioning within their organizational settings (e.g., schools, workplaces), and their abilities to navigate community settings, such as faith-based organizations. Further, the lack of understanding of developmental psychopathology among policymakers at the local, state, and national levels often means policies are made that are ill-suited for populations of individuals who have experienced adversity during their formative developmental years. MHFC's groundbreaking work demonstrates that it is possible to help individuals overcome traumatic childhood histories.

When interfacing with individuals who have experienced trauma, systems too often react by asking "What's wrong with you?" rather than "What happened to you?" In addressing the latter, interdisciplinary practitioners are increasingly being urged to utilize trauma-informed care in interventions (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023). In order to maximize the impact of these efforts, interventions need to be provided in settings that are trauma-informed, knowledge-based and that understand trauma and its far-reaching implications.

While this is a step in the right direction, it is imperative to understand trauma-informed care through the lens of developmental psychopathology. One of the tenants of trauma-informed care is understanding the impact that early childhood, adolescent and adult trauma can have on one's physical and mental health (SAMHSA, 2023). For instance, if a survivor experiences an adult sexual assault, there is an interview approach recommended for collecting physical evidence and event narratives. However, that survivor's ability to navigate care can be compromised based on their childhood experiences. Furthermore, the extensive substance use in our nation, resulting in overdose deaths, is also impacted by the tenants of developmental psychopathology as many individuals who are abused and neglected as children turn to drugs as coping mechanisms (Cicchetti & Handley, 2019). Thus, building upon the research conducted in a developmental psychopathology framework may help to solve many of our nation's current social problems. However, rather than proactively using this focus, our nation unfortunately has criminalized many behaviors that in other countries have been understood through a more evidence-informed lens. "The School-to-Prison Pipeline is a social phenomenon where students become formally involved with the criminal justice system as a result of school policies that use law enforcement, rather than discipline, to address behavioral problems." (Owens, 2016).

The earlier study of CPP described above demonstrated long-term impacts at the age of 9 years old for children whose parents participated in CPP (Guild et al., 2017). The children had better outcomes in schools as rated by teachers. If we do not offer interventions such as CPP more broadly, then school systems that are trying to manage children's behavior problems will be over-burdened. Providers and school settings are seeing an increase in diagnoses of learning disabilities, including attention deficit disorder, when in fact externalizing behaviors may be a call for help for unresolved adverse childhood events (Hunt et al., 2017).

In order to better understand the impact of early adversity, the adverse childhood experiences (ACEs) rating scale was developed over two decades ago, seeking an understanding of how adversity of individuals during their childhoods related to adult health outcomes (Felitti et al., 1998). This approach, however, consisted of only 10 questions with dichotomous (yes/no) answers relating to experiences one has prior to the age of 18. It is imperative that we understand not only the presence of experiences of one's childhood, but the severity, the frequency, and the perpetrators of those adverse events (Briggs et al., 2021; Larkin et al., 2013). Furthermore, we must balance those adverse events against protective risk factors that may promote resilience (Amaya-Jackson et al., 2021). Beginning under Dante's leadership, the work conducted at MHFC for almost four decades not only begins to disentangle how abuse and neglect can impact mental, physiological, and socioemotional well-being, but also posits hope that resilience can abound. Having an adverse childhood event is not an epitaph for a tombstone that encapsulates one's entire life. Rather, adversities in childhood are starting points to begin to understand how childhood events can initiate either adaptive or maladaptive trajectories. The work of Dante and his colleagues, reported herein, offers hope that the provision of evidence-based interventions can avert a lifelong maladaptive developmental course.

SAMHSA recently awarded MHFC a Treatment and Services Adaptation Center grant, Sustaining Change, to provide child- and parent-serving organizations resources to support training on evidence-based interventions, such as CPP and IPT-A. However, SAMHSA recognized that these interventions cannot simply be taught from a manual. To increase access to evidence-based treatments, we must also provide therapist supervision, leadership training, and long-term support. When a therapist is working with a parent who has a childhood and adult trauma history, and their child is at risk for their own childhood maltreatment from either the parent or perhaps the parent's abusive partner, chances are highly likely that that family has other socioeconomical risk factors that must be addressed: scarce food, insecure housing, transportation barriers, a lack of social support, and perhaps even a lack of documentation of citizenship. The current political climate, depending on one's residence, may cause families fears regarding help-seeking. Unfortunately, these complex needs often require interface with multilayered systems that operate around the parent–child dyad, which evidence-based interventions such as CPP and IPT can begin to disentangle. Furthermore, with current biologically informed studies that are being conducted, we can begin to address the short and long-term physical health consequences on emerging adults and across the life course.

For decades the IPV research field has documented that violence experiences can cause a host of medical and mental health issues (Campbell et al., 2002; Campbell, 2002; Campbell & Lewandowski, 1997) These can include chronic fatigue syndrome, fibromyalgia, gastrointestinal diseases, arthritis, neurological conditions such as migraines, and other health consequences. Mental health consequences can include depression, post-traumatic stress disorder, suicidal thoughts and behaviors, and other symptoms.

By addressing trauma histories in parents, and subsequently attempting to prevent negative outcomes for their children, these intergenerational mental and physical health cascades can be addressed and potentially improve diverse systems of care. Utilization of a developmental psychopathology framework to understand the effects of early adversity also can translate into immense savings for communities that would not need to spend subsequent resources on physical and mental health services for individuals on subsidized healthcare. By preventing intergenerational abuse and neglect, we can potentially reduce needs for

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school-based interventions and garner resources for children's services that can more directly address needs.

In the United States, we have had landmark legislation, Child Abuse Prevention and Treatment Act (CAPTA), or some version of it, for over four decades. The federal act has had numerous amendments to address various risk factors for child abuse and neglect. "The key Federal legislation addressing child abuse and neglect is the Child Abuse Prevention and Treatment Act (CAPTA), originally enacted on January 31, 1974 (P.L. 93–247). This act has been amended several times and was last reauthorized on December 20, 2010, by the CAPTA Reauthorization Act of 2010 (P.L. 111–320). It was amended in 2015, 2016, and 2018, and most recently, certain provisions of the act were amended on January 7, 2019, by the Victims of Child Abuse Act Reauthorization Act of 2018 (P.L. 115–424; Child Welfare Information Gateway, 2019, p.1)." CAPTA was also amended by the Trafficking Victims Prevention and Protection Reauthorization Act of 2022, P.L. 117–348, enacted January 5, 2023. Sec. 133 " . . . revises criteria for considering a child to be a victim of child abuse and neglect and of sexual abuse. Specifically, it provides that a child shall be considered a victim of child abuse and neglect and of sexual abuse if the child is identified as being a victim of human trafficking. Currently, a child is considered a victim of child abuse and neglect and of sexual abuse if the child is identified as being a victim of sex trafficking or a victim of severe forms of trafficking in persons" (Trafficking Victims Prevention and Protection Reauthorization Act of 2022). The Act also provides reporting processes for missing or abducted foster care youth.

Myriad other legislation also informs the federal landscape to prevent and respond to child abuse and neglect. Congress also passed Family First Prevention Services Act (FFPSA) legislation which " . . . authorized new optional title IV-E funding for time-limited prevention services for mental health, substance abuse, and in-home parent skill-based programs for children or youth who are candidates for foster care, pregnant or parenting youth in foster care, and the parents or kin caregivers of those children and youth" (Children's Bureau, 2023). FFPSA was well-intended to reduce residential treatment in poorly regulated facilities and increase use of evidence-based treatments. In 2019, the Children's Defense Fund published the following statement:

(In February 2018, after many years of attempts, the Family First Prevention Services Act of 2018 was signed into law. Family First contains several ambitious reforms to existing child welfare law. Among other things, it affirms that every child deserves to grow up in a safe, stable and nurturing family and that children should only be placed in group homes or congregate care facilities when they need a level of care that cannot be achieved in foster family care. For those children and youth who need that extra support, it strengthens the requirements for non-family placements and ensures that they do not remain there any longer than is necessary. For the first time, Family First allows states and tribes to use federal dollars not only for services for kids in foster care, but for evidence-based services and programs that keep kids safe in their homes . . . (Children's Defense Fund, 2019, para. 1).)

This legislation required evidence-based interventions to address child maltreatment be used in federally funded settings. However, despite being a step in the right direction, the implementation has had numerous problems. The legislation dedicated too few dollars toward training providers on evidence-based interventions and supporting implementation science efforts to ensure access and sustainability, such as fidelity to the models provided in real-world settings. Further, despite RCTs being the gold standard in many fields, FFPSA does not recognize randomized control trial findings with active comparison models nor peer reviewed evidence:

The levels of evidence for interventions (Promising, Supported, and Well supported) are currently being clarified by the Federal government but are similar in many ways to the California Evidence Based Clearinghouse for Child Welfare (CEBC) criteria, with three major exceptions: (1) an RCT study is not required; (2) publication in a peer review journal is not required (at this time); and (3) a book, program manual or some other form of documentation is required (Casey Family Programs, 2018, p. iii).

Although the criteria are similar to CEBC, the Prevention Clearinghouse rates many programs lower than CEBC, despite RCT evidence, and does not include well-rated programs that CEBC includes. Chosen entities are continuing to review various interventions to determine their eligibility as Promising, Supported, or Well Supported. A challenging aspect of how treatment programs are rated and approved for funding involves how decision criteria and rating scales are developed. When certain outcomes are prioritized and other indicators of well-being are not considered, programs for some populations or with domains that are essential from a developmental psychopathology framework are likely to be overlooked or excluded from future funding. Initial program ratings excluded research that utilized RCT gold standards of comparing treatment to other active interventions, rather than comparing to no treatment or waitlist controls. By excluding these programs, children in the child welfare system may be denied access to models that have been deemed to be the most rigorously evaluated and supported interventions. After appeals and feedback from public comment opportunities, these decisions are being re-evaluated, but unless these ratings are reconsidered, many children at highest risk for future negative trajectories may have access only to treatment with less rigorous research support.

As our country continues to grapple with the varying perspectives over law enforcement's role in society, whether CPS is effective and equitable, and in whose domain responding to child abuse and neglect belongs, we have faced a critical time to respond to, and prevent, child maltreatment. With long-standing evidence of CPP and IPT efficacy, it is perhaps interventions such as these that should be provided in community settings such as churches, schools, and other locations that families frequent and trust. There are several barriers to translating RCT findings into everyday settings, including having policy makers familiar with the science. However, MHFC has overcome many of those barriers under Dante's leadership and vision for preventing and addressing the sequelae of child abuse and neglect.

Nonetheless, barriers remain for widescale translation of science into practice. These barriers can include journals being unavailable to lay audiences because of subscription fees, the use of language which is field specific, and a lack of consistent graduate and undergraduate training that helps future service providers understand how to implement evidence-based practices. A new intervention, though well-intended, may not be grounded in science nor may there be sufficient evidence to warrant its inclusion in social service settings; there is a need, however, for innovative approaches to be developed. Academic-social service partnerships allow community-based participatory research (CBPR) to occur which can help address some of these issues (Israel et al., 2001).

CBPR is grounded in the principles that the target of the intervention, such as the parents/caregivers and/or the child, are

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the experts in their own care. CBPR suggests that study participants are at the table helping to create and implement the science, utilize the data for their own purposes, such as further education or educating policymakers on the benefits of particular intervention needs, and organizations can use the data while drafting grant proposals for why they may need more funding. Developmental psychopathology research and RCTs have moved in the direction of incorporating more community and participant voices as well as mixed-method designs that can incorporate quantitative and qualitative methods to enrich understanding of children's and families' needs and preferences. These developments can further the goals of improving precision medicine approaches of what works best for whom (Fonagy et al., 2014) and developing treatments that address the needs of a wide range of individuals and families. Availability of these treatment models needs to be paired with increased access to these services and support for providers and organizations who offer these services.

## Future perspectives

The results from the RCTs initiated at MHFC under Dante's leadership and spanning almost four decades offer considerable hope for preventing the lifelong consequences of early adversity. Despite these advances, there is a continued need to understand mechanisms that contribute to positive outcomes in intervention. Are there sensitive periods in which to intervene, particularly as this relates to adversity and trauma? Is it ever too late to right the developmental course onto a more adaptive trajectory? Might interventions operate differently for varied ethnic and cultural groups, and, if so, should efforts be directed to understanding these differences and to enhancing evidence-based interventions to increase their effectiveness with diverse groups?

Although developmental psychopathology has always maintained a life course perspective, much of the seminal work in the field has been conducted with populations from infancy through adolescence. As data on the effects of early adversity on health consequences in early and later adulthood are generated, the life course contributions of developmental psychopathology will become even more evident. As the population in the United States continues to age, information derived from these studies has the potential to contribute to prevention strategies to help address premature aging related to early trauma. Moreover, because premature aging can also affect parenting, developing preventive strategies for young adults can reduce the likelihood of the intergenerational transmission of trauma.

MHFC has always been committed to transdisciplinary efforts with professionals with whom we work or train. TRANSFORM allows us to expand the dissemination of our research into other systems, including law enforcement, first responders, social service providers, and educational child-serving faculty and staff, as well as lay communities of parents, young adults, and adolescents. According to transdisciplinary research, some posit it is the inclusion of researchers from different disciplines working together to construct an overarching model that serves to advance best practices for addressing the needs of children and families (Pineo et al., 2021; Rosenfield, 1992). At MHFC, we envision a world where we can share knowledge derived from RCTs with all those who encounter children and families in order to understand, prevent, and treat the sequelae of child maltreatment. Developmental psychopathology offers that lens, remembering that over our lifespan, we encounter family, friends, and professionals who inform not only our current experiences, but also potentially our future trajectories. It has been a privilege to work with Dante and to benefit from his extensive knowledge of developmental theory. Dante's vision and passion have guided much of our work. Having MHFC as one of the founding sites for developmental psychopathology and as the early home of the flagship journal, *Development and Psychopathology,* has been an honor. We look forward to building upon this legacy and to continuing to disseminate our work to improve society for individuals who are all too often forgotten.

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