

ZERO TO THREE JOURNAL

Chronic Stress and Complex Trauma

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Trauma and Boys:
What's Different?

Pregnancy After
Childhood Trauma

Trauma-Informed
Practice in Early
Childhood Education

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Overcoming the Consequences
of Complex Trauma

The Trauma of
Hurricane Katrina



ZERO TO THREE
Early connections last a lifetime

This Issue and Why it Matters

The articles in this issue of *ZERO TO THREE* delve into the prevalence and consequences of trauma in the lives of young children. It is now well documented that childhood abuse, neglect, and family dysfunction lead to a host of physical and social problems later in life. Because young children experience their world through their relationships with parents and caregivers, the quality of these relationships is fundamental to the healthy development of physical, emotional, social, behavioral, and intellectual capacities.

Unfortunately, family dysfunction, abuse, and trauma often become an intergenerational problem. One component in child maltreatment prevention is to promote safe, stable, and nurturing relationships between children and their caregivers. However, to be effective, systems that work with these troubled families must identify the parent's trauma history and understand how their early traumatic experiences impair their ability to parent their own children successfully. Strengthening the protective factors—such as supportive family environments and social networks—that buffer children during times of stress is a complex undertaking. The articles in this issue provide thoughtful analysis of these challenges and provide strategies for addressing the effects of trauma at the individual, family, and systems levels.

This issue of *ZERO TO THREE* also unveils a new, updated look for the Journal. We hope you are pleased with the new look as well as the content, and as always, we welcome your feedback through letters to the Editor.

Stefanie Powers, Editor
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We are rebranding our ZERO TO THREE organizational resources this year!

Changes include a new logo that reflects the care we want all babies to have and the hopeful future each child in the world deserves. We will also share new resources and will soon launch a new website, designed to help you find what you need faster and share the content you love more easily!

Please sign up at www.zerotothree.org/getupdates to receive updates and tutorials to better understand how to use our new resources.

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Chronic Stress and Complex Trauma

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“If You Brave Enough to Live It, the Least I Can Do Is Listen”¹

Overcoming the Consequences of Complex Trauma

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Abstract

Too many parents who find themselves involved with child welfare agencies have had lives threaded with deeply traumatic events. As adults, their childhood histories manifest themselves in substance abuse, domestic violence, relational problems, risk-taking behaviors, emotional lability, self-harming, anxiety, and depression. To successfully overcome the worst of the disabilities associated with complex childhood trauma, the family support community must be able to distinguish the behavioral hallmarks—the symptoms—of complex trauma from the chronic underlying traumatic history that drives the parents' behavior.

A vampire leans over the soft exposed neck of an innocent girl and sinks his fangs into her. As he sucks the blood from her, the bite fills her with his venom. From then on, she carries his mark. The vampire has polluted her; she is no longer pure and good. Young children who are sexually abused take on the responsibility for their victimization in exactly this way (Duran, 2006). They internalize the violence and degradation of their assault, believing that they are responsible for bringing it on. Their developmental trajectory is hijacked by the need to make sense of the failure of trusted adults to keep them safe. As they grow older, they may be victimized repeatedly and may initiate sexualized behaviors with others. They may engage in substance abuse and criminal behavior and enter into relationships in which they are victims of domestic violence. They are likely to experience psychiatric problems (Hindman, 1999; Trickett, Noll, & Putnam, 2011).

Child maltreatment forms the backdrop for the lives of many more adults than one would ever want to imagine. In all its

forms it is far more common than the official statistics document. This truth was brought home through the work of Vince Felitti and Robert Anda and the Adverse Childhood Experiences (ACE) Study (Felitti, 2002). Dr. Felitti was a doctor of internal medicine at Kaiser Permanente in San Diego, California. He was troubled by the weight loss outcomes of patients who had participated in the Southern California Permanente Medical Group's Positive Choice Weight Loss Program that he was running.

We slowly discovered that major weight loss is often sexually or physically threatening and that obesity, whatever its health risks, is protective emotionally. Ultimately, we saw that certain of our more intractable public health problems such as obesity are often also unconsciously attempted solutions to problems dating back to the earliest years but hidden by time, by shame, by secrecy, and by social taboos against exploring certain areas of life experience. (Felitti, Jakstis, Pepper, & Ray, 2010)

¹ This is a quote (page 298) from the novel, *Ruby*, by Cynthia Bond about a woman who was sexually assaulted from the time she was 6 years old until she reached her 40s. Near the book's conclusion, someone who loves her asks her to tell him about her past.

This early discovery led to Dr. Felitti's partnership with Dr. Robert Anda and the U.S. Centers for Disease Control and Prevention. With agreement from Kaiser Permanente in San Diego, they began asking patients about their adverse experiences as children, awarding an ACE score of 0 to 10 to each study participant based on the number of items to which the respondent said yes (Felitti, 2002). In this predominantly middle-class group of people, average age 57 years old, the prevalence of ACEs was surprisingly high (Redding, 2006):

- 28% were physically abused
- 27% grew up living with someone who was a problem drinker and/or used street drugs
- 21% were sexually abused
- 19% lived with a mentally ill person
- 13% witnessed domestic violence against their mothers

As an example of how these results exploded previous notions of the prevalence of maltreatment, consider physical abuse. In 2013, child welfare agencies across the U.S. substantiated the physical abuse of 122,159 children. These children represented fewer than one percent (0.16%) of the children in the U.S. (U.S. Department of Health and Human Services, 2015). Comparing this tiny fraction to the more than one quarter of the respondents (28%) to the ACE Survey who reported having experienced physical abuse as a child, it is clear that the public system for identifying maltreatment is not capturing even the tip of the iceberg.

Unfortunately, ACEs do not exist in isolation. This is especially true for children who have been the subject of maltreatment investigations—whether substantiated or not. They are likely to have experienced multiple ACEs. In an exploration of that relationship, the researchers responsible for the National Survey of Child and Adolescent Well-Being found that more than half the children investigated as victims of child maltreatment had four or more ACEs. This included children in every age range; 38% of children ages birth to 2 years old had four or more ACEs (Stambaugh et al., 2013).

More important than knowing that many more Americans live with a history of childhood trauma is learning what impact this has on them as they age. The ACE Study took the survey responses and matched them to each person's medical record. Would they find a relationship between the number of ACEs the respondents listed and the quality of their health? Indeed they did. Felitti and Anda discovered that the more ACEs adults had, the more likely they were to have negative physical and mental health outcomes. At highest risk for chronic disease and early death were respondents who had four or more ACEs.

The original Kaiser Permanente sample was drawn from a predominantly white, middle-class, college-educated sample (Centers for Disease Control and Prevention, 2014). Subsequently the ACE Survey has been used with a wide range of



Photo: © istock/Ritche White

Childhood trauma has a huge effect on how the various areas in the brain function.

populations (e.g., the state of Iowa, 7 tribes from the southwestern U.S.). In a study looking at adolescents presenting for trauma-focused assessment and treatment, the majority (61.3%) had been the victims of multiple ACEs. So-called poly-victimization, especially when it occurs in the first 5 years of life, lays the foundation for additional victimization during adolescence. Because each developmental stage builds on

the competencies achieved (or missed) during previous stages, early childhood trauma "can interfere with the normative developmental process and set the stage for a variety of functional impairments and health issues that can persist and evolve across the lifespan" (Grasso, Dierkhising, Branson, & Ford, 2015).

Compounding the difficulty of assisting complex trauma victims is their distorted perception of themselves. They believe themselves responsible for whatever terrible things have happened to them. Their ACEs are so much the fabric of their lives that they think those experiences are normal. In her autobiographical book, *Living With a Wild God*, Barbara Ehrenreich described a childhood that included no fewer than five ACEs. But her memory of that period does not include an objective appreciation of her trauma:

But if you are thinking this is the usual story of dysfunction and abuse, then I'm doing a poor job of telling it, and projecting my own standards as a parent onto a time, and a class, when children were still regarded as miscreants rather than the artisanal projects that they have become today. (Ehrenreich, 2014, p.12)

Before we recount the stories that form the core of this article, a definition of complex trauma is in order.

The term complex trauma describes the dual problem of children's exposure to traumatic events and the impact of this exposure on immediate and long-term outcomes. Complex traumatic exposure refers to children's experi-

ences of multiple traumatic events that occur within the caregiving system—the social environment that is supposed to be the source of safety and stability in a child’s life. Typically, complex trauma exposure refers to the simultaneous or sequential occurrences of child maltreatment—including emotional abuse and neglect, sexual abuse, physical abuse, and witnessing domestic violence—that are chronic and begin in early childhood. Moreover, the initial traumatic experiences (e.g., parental neglect and emotional abuse) and the resulting emotional dysregulation, loss of a safe base, loss of direction, and inability to detect or respond to danger cues, often lead to subsequent trauma exposure (e.g., physical and sexual abuse, or community violence). (Cook, Blaustein, Spinazzola, & van der Kolk, 2003, p. 5)

The Brain: What Fires Together Wires Together

Childhood trauma has a huge effect on how the various areas in the brain function. The brain builds itself on the basis of the child’s experiences. If those experiences predominantly create fear and uncertainty, the areas in the brain associated with the fight-flight-freeze response will build stronger connections than those associated with problem solving, emotional regulation, and higher cognitive thinking. During the first 3 years, the rate of brain development is phenomenally fast. A newborn’s brain weighs approximately 13 ounces or 28% of its adult weight; by 3 years old the brain weighs 42 ounces, which

is approximately 90% of its adult weight (Chudler, 2015). With brain development this rapid, the child’s experiences are having a major influence on building productive, curious, likeable humans or insecure, angry, reactive ones.

Complex trauma co-exists with other factors that impair the brain’s ability to do its job. Alcohol and drugs numb the pain for the victim but they also reduce critical thinking capacity. More catastrophic is the concurrence of complex trauma and fetal alcohol spectrum disorders. As is often true for women whose children are in foster care, not only did they drink while pregnant with their children, they are themselves affected by prenatal alcohol exposure because their mothers used alcohol during pregnancy. Prenatal alcohol exposure has permanent deleterious effects on the brain which are made manifest in blighted executive functioning skills (see box Effects of Prenatal Alcohol Exposure).

The list in the box, although composed from documentation of fetal alcohol spectrum disorders, is similar to the effects seen in cases of complex trauma (Hudson, 2011).

The Impact of Complex Trauma on One Family

The introductory discussion of ACEs is made flesh and blood when we meet Elizabeth (Liz) Johnson.² Her sons, James, 5 years old, and Daniel, 3 years old, were first brought to the attention of child protective services (CPS) after Liz was brutally beaten by her boyfriend of 2 months. When police and EMS responded to the scene, they found Liz in critical condition and immediately took her to the hospital. CPS was notified that James and Daniel had been present when the incident occurred and had no safe place to go. Upon their arrival, CPS found that James and Daniel’s father was deceased, and they had no known relatives. Liz’s only relative was her mother, who was contacted but stated that she could not take responsibility for the boys. Due to the absence of family, James and Daniel were taken into emergency custody and placed in a traditional foster home. James participated in a forensic interview which revealed that he had witnessed his mother being beaten in the most recent incident and had also witnessed episodes of domestic violence regularly over the last 2 months. Both boys were also seen by a medical provider who found that they had marks on their bodies consistent with physical abuse. Two days later an Emergency Shelter Hearing was held to determine whether James and Daniel should remain in state custody. Liz was released from the hospital just in time to attend this hearing, entering the court room on crutches due to a broken leg and with many visible injuries to her face, neck, and arms. It was determined that the boys would remain in the state’s custody and that the family would be referred to the local Safe Babies Court Team (SBCT, see box Safe Babies Court Teams). Charlotte Williams, SBCT community coordinator, met with Liz following the hearing to describe the SBCT approach. Liz con-

Effects of Prenatal Alcohol Exposure

Brain damage from prenatal alcohol exposure can lead to:

- Impulse control issues that cause:
 - irritability
 - aggression
 - episodes of rage
 - promiscuity
- Lack of personal boundaries
- Poor reasoning and judgment leading to high-risk behavior
- Poor social skills
 - likely a follower
 - chooses friends who get in trouble
 - sometimes isolated or depressed
 - easily victimized
- Poor memory
- Inability to learn from mistakes
- Difficulty managing money
- Inability to interpret social cues, facial expressions
- Loss of ability to process information when stressed
- Inability to read environment:
 - difficulty understanding laws
 - difficulty understanding social situations
 - difficulty judging right from wrong
- Despite adult appearance, has a child’s appreciation of the world; behavior is consistent with someone much younger

² The names and certain specific details have been modified to protect the privacy of the family described.

Safe Babies Court Teams

Safe Babies Court Teams (SBCT) focus on improving how the courts, child welfare agencies, and related child-serving organizations work together, share information, and expedite services for young children. This work increases knowledge among all those who work with maltreated children about the needs of infants and toddlers and how to meet the individual needs of each child and parent. Typically judges introduce the community to the SBCT approach. They collaborate with child development specialists to create teams of child welfare and health professionals, child advocates, and community leaders. Together the ever expanding SBCT provides tailored services to abused and neglected infants and toddlers and their parents.



Photo: © istock/bukharova

sented to participate in the program, and an assessment was scheduled the following week to take place at her mother's home.

Over the course of their early meetings, Liz's story began to take shape. At one point, Liz told Charlotte that she didn't tell people about her life because she was fearful that if anyone knew about the terrible things that had happened in her life, they would judge her and feel that she didn't deserve to have her children back. Charlotte assured her that this was not the case and that any information Liz shared would be used to connect her to services that would help her to work through anything that may have happened in the past. Receiving this reassurance, Liz was able to share more of her story. The life story that emerged was heartbreaking. She had experienced every single ACE on the 10-item survey. This survey asks, "During your first 18 year of life, did you experience:

1. Physical abuse?
2. Emotional abuse?
3. Contact sexual abuse?
4. Emotional neglect?
5. Physical neglect?
6. Your mother being physically abused?
7. Parental substance abuse?
8. Losing a parent to divorce or separation?
9. A household member going to prison?
10. A household member who was depressed, mentally ill, or attempted suicide?"

(The survey instrument is available at www.cdc.gov/violenceprevention/cestudy)

For as long as Liz could remember, her father was physically and emotionally abusive toward her mother, often restraining her in a chair and holding a knife to her neck while questioning her about things he believed she had lied to him about. Liz stated that on the few occasions she tried to help her mother, her father turned his aggression toward her, locking her in a closet or whipping her with a belt. When Liz was 7 years old, her father started to sexually abuse her. When she turned 10, a teacher reported the possibility that Liz was being abused to CPS and she was taken into custody. She was separated from her mother only for a short time, but her father's parental rights were terminated.

If service providers can take the parent's trauma history into account and view their actions through the lens of complex trauma, the reasons for their behaviors become clearer, and they can identify more effective ways to support parents.

When she was 13, she began a series of relationships with men, all of which involved domestic violence. She had her first child just after turning 15. Feeling that she had no other options, she left the child with his father, hoping that his violence toward her would not create danger for the baby. James and Daniel's father left her when she was pregnant with Daniel. He died just after Daniel's birth. Unable to support her family, she turned to prostitution. Reflecting on all her relationships with men, Liz told Charlotte that she felt like she deserved to be beaten. According to Liz, the man who sent her to the hospital had not been physically abusive to her before that incident, despite what James had disclosed to the forensic interviewer. Liz said the violence began after they started using heroin together. Charlotte responded to Liz's life story by saying how hard it must have been as a child and young adult to face so many terrible events. Liz replied that it was just life and that others must have similar childhoods. For her, normal was life as she had experienced it.

Strategies for Supporting Parents With Histories of Complex Trauma

Many parents of children in the foster care system have themselves had histories of repeated trauma, often in the context of their own caregiving relationships with their parents. When working with these parents, it is essential that service providers understand the damage such experiences can cause to their ability to think ahead and plan, to manage their emotions and their actions, to relate in a healthy way with others, to talk coherently about their own experiences, to identify what they think and feel, and to take others' perspectives (van der Kolk, 2014). There is often also damage to the parent's self-concept: they may see themselves as "damaged goods," as unworthy and unlovable. Paradoxically, these views of the self can manifest as demanding, entitled, and grandiose feelings and behaviors. They expect to fail and expect that others will let them down, or will



Photo: © iStock/Thomas Perkins

When children are wounded by traumatic experiences within their family system, and when these traumas are not addressed, they can carry the scars for the rest of their lives.

actively work and conspire against them. They often put their trust in the least trustworthy of people; those who have abused them in the past, be they parents, lovers, friends, or siblings. And they may reject the help of those who genuinely want to help them, frustrating those team members and family who want to support them. These parents are often labeled as “noncompliant” and “self-destructive.” They often abuse substances because it is the most effective resource readily available to them to cope with flashbacks and other traumatic reminders and the strong emotions that accompany them.

If service providers can take parents' trauma history into account and view their actions through the lens of complex trauma, the reasons for their behaviors become clearer, and they can identify more effective ways to support parents:

1. Begin with the understanding that their early childhood caregiving relationships (which are the model for all future expectations of others) were fraught with danger, and that normative childhood vulnerability and trust within those relationships were often met with rejection, abandonment, and betrayal. Therefore, do not expect that the parent will trust you simply because you express genuine concern for them. They have learned to be wary and do not trust others. You will have to earn their trust over time.
2. Cognitive function is often affected such that the parent is overwhelmed by the many demands presented by a case plan; by the formalized language of court proceedings; and by the barrage of advice, instructions, and orders coming from their caseworker, their family, their attorney, and from service providers. This does not mean

they are not intelligent. They simply need more time to take in and process new information. These parents benefit when team members slow down their pace; speak in short, one-part sentences; then check for understanding. Giving multistep instructions can be overwhelming to the parent who then fails to do as instructed, or tries, becomes frustrated, and gives up. These parents may be unfairly judged as noncompliant and might do much better with a slight change in approach.

3. Their ability to recall events as a coherent story is impaired, and because of this they are often perceived as being deceptive. To get an accurate narrative of their history, team members should expect to gather information over many sessions, using the case documentation to help in organizing a coherent timeline of their life. In addition, because they are wary, they often will not share some parts of their story until they have developed some sense of the team member as trustworthy and reliable. They will need support and patience to tell their story.
4. Their ability to think ahead and to plan is often limited, thus they will miss or double-book appointments, over-extend themselves, or simply forget about an appointment despite the usual reminders. They lose calendars and appointment cards given to them. These parents tend to focus solely on the present moment and are often responding to one crisis after another due to their impaired ability to plan ahead. The constant activation of their fight or flight response weakens any capacity for thinking past the present moment. Safety planning, so crucial in child welfare cases, relies on the ability to think ahead to identify possible dangers and risks to the child so that these can be avoided or reduced. These parents have a very hard time thinking ahead. These parents can best be supported through transparency and coordination among service providers, or central coordination by the caseworker regarding all case-related appointments. These parents will benefit from frequent verbal reminders (especially the day before an appointment and the morning of an appointment) and by help with problem solving around any scheduling conflicts that arise. This assistance provides the parent with an experience of learning how to plan and schedule and how to address conflicting demands through a supportive relationship. Having supportive adults who mentor youth through this learning process is how these skills are usually developed through middle childhood and the teen years. These parents have not had this experience but rather were, to paraphrase Dr. Bruce Perry (Perry, 1997), incubated in crisis. Often they are not self-sabotaging but simply lack basic skills usually mastered at an earlier developmental stage.
5. Parents with histories of severe developmental trauma often have internalized powerfully negative self-attributions based on their early experiences. They may view themselves as inherently defective and fear that opening up to others will result in others realizing

they are damaged and then rejecting them. These powerful and painful cognitive distortions are highly resistant to reason. Such parents fear that if others see who they really are, it will confirm their defectiveness. This fear feeds their avoidance of vulnerability and honesty with team members. Paradoxically, they long for acceptance, validation, and inclusion, but at the same time do not trust those who mirror them in a positive way. For them, this can feel manipulative and they can respond with emotions ranging from skepticism to rage. Team members may come away from such an exchange feeling wounded, confused, and defensive. Parents who present this way can be supported when team members maintain a consistent positive regard for the parent, while resisting the temptation of attempting to connect primarily through empathic support, which some parents may experience as manipulative and dishonest. Initially the focus should be on communicating clearly and maintaining consistency with the parent. Praise should be given when the parent has successes but should be specific and brief so as not to overwhelm the parent. Constructive criticism should be brief and focused as well and should be balanced with recognition of any successes.

Parents with histories of severe developmental trauma often have internalized powerfully negative self-attributions based on their early experiences.

It should be noted that not all parents with such histories would present with these difficulties. Some may have benefited from prior treatment; some may have a natural resilience in the face of adversity. Yet others may have been affected more in one area of functioning than another, and thus may present with only one or two of the problems presented. It is essential that a thorough assessment of the parent's developmental and trauma history is completed with the understanding that, given the interpersonal difficulties they may struggle with, such a history will likely be gathered over weeks, if not months. In our experience, parents need time to develop enough trust to share some of their story, and, as discussed above, may struggle with putting together a coherent narrative of their lives. In addition, the impact of the parents' own prenatal alcohol exposure, current substance abuse, or both is often interwoven with their trauma history both as an underlying contributor to some of the deficits outlined above and to their attempt to cope with their history of trauma through numbing (Ayard, Berlin, Rosanbalm, & Dodge, 2011; Herrick, Hudson, & Burd, 2011). While it is beyond the scope of this article to address this factor meaningfully, both prenatal alcohol exposure and current substance abuse should be assessed and factored into treatment.

Preventing a Lifetime of Suffering

It is important to take a multigenerational approach with families involved in the child welfare system. In addition to working with parents through the lens of complex trauma, professionals working with vulnerable families need to be able to tell many

more stories like Penny's. Penny³ was a 3-year-old toddler referred for therapy following her verbal disclosure of sexual abuse by her stepfather, Martin. Martin had married Penny's mother, Angela, when Penny was 5 months old. (Penny's biological father denied she was his child when she was born and had never had any contact with Penny.) Thus Martin was Penny's psychological father, the man she identified as "Daddy." Penny told a preschool teacher that Martin had repeatedly touched her private parts and her disclosure indicated he had attempted penetration. Although these attempts were unsuccessful, Penny said they were painful and that she asked him to "wait until I'm bigger." Penny talked about these incidents readily, indicating she perceived them as normal interactions between father and child. Penny's disclosure to her preschool teacher was reported to CPS. When the CPS investigator interviewed Penny's parents about the disclosure, they both denied the allegations vehemently and

expressed dismay that Penny would say such a thing. Angela initially indicated she would cooperate with the investigation and have Martin move out of the home until it was completed, and so Penny went home with her. Later it was apparent that Angela had pressured Penny to recant, telling her that Martin would go to jail because of Penny's disclosure. Two days later the CPS investigator was told by an anonymous source that Angela was allowing Martin to have unsupervised access to Penny, and that Angela was very angry with Penny for having made the disclosure. The investigator met with Angela at the home and confronted her about these allegations. Angela became agitated and stated that Penny was lying about the abuse. The investigator noted that Penny appeared frightened of Angela, who was visibly angry. Angela now refused to make Martin leave the home while the investigation was completed, stating that Martin had done nothing wrong and should not be punished. Therefore Penny was moved to a therapeutic foster home as Penny's mother could not identify any appropriate family members. Shortly thereafter Angela and Martin surrendered their parental rights.

At her first assessment appointment with the mental health clinician, Penny was brought by her foster parents, the Smiths, with whom she had resided for approximately 3 weeks. Penny presented as a highly intelligent and verbal child. She was outgoing and curious. However, she showed no appropriate caution with the unknown therapist, readily leaving her foster parents to go to the playroom with the therapist. This indicated that Penny had not developed age-appropriate wariness of strangers and did not use her primary caregivers as a "secure base" (Bowlby, 1988) to help her identify people who were safe and those who were not safe. The absence of a self-protective caution with strangers made Penny markedly more vulnerable to other abusers.

3 Names and certain details of this story have been modified to protect the privacy of the families described.

Mr. and Mrs. Smith reported that Penny seldom talked about her parents, but had periodically made brief, disjointed disclosures about Martin's abuse. For example, one day when at the park with Mrs. Smith, Penny noticed a red truck. She said: "Daddy took me for a ride in a red truck one time. It went really fast! It was fun." Mrs. Smith said that it sounded like it was fun. Penny then became pensive and said, "I had sex with Daddy. I was bad." Mrs. Smith was startled, but calmly reassured Penny that she was not bad, but that it was Martin who had acted badly. Penny thought about this, then smiled at Mrs. Smith and nodded. Penny also said one day that her parents were in jail "forever" because "I told a lie." Penny's belief that her parents were in jail made sense given their abrupt abandonment of her in their attempt to avoid further legal consequences for Martin's abuse of Penny. Despite his abuse of her, Penny experienced Martin as the "loving" parent and grieved his absence. Angela was volatile and confrontational in her interactions with others, and Penny perceived her as frightening and dangerous. Martin was affectionate, soft-spoken, and reassuring by contrast, and Penny bore the guilt of feeling fully responsible for his fate.

During her assessment and treatment Penny demonstrated a warm relationship with both of the Smiths, who were loving and supportive and who were experienced in fostering children with histories of child sexual abuse. The Smiths quickly came to love Penny and began the process of adopting her within 2 months of her entering foster care. During treatment and between sessions, Penny's play themes reinforced that she saw her father as affectionate and loving and she saw her mother as frightening and dangerous. For example, while playing during a session, Penny stopped and appeared "zoned out." She then talked about a time when her mother was angry at her and said she would throw Penny out the second story window. Penny engaged in "magical thinking" so common in cases of child sexual abuse. She believed fully that she could reunite with her father and that he could simply stop abusing her. Penny's therapy focused on using the healthy supportive caregiving relationship she had developed with the Smiths to help Penny work through her confusion, sadness, loss, and fears; to address her cognitive distortions; to integrate her experience of being sexually abused by a parent; and to anchor Penny in a healthy parent-child relationship and the normative physical, emotional, and social boundaries such a relationship provides. Penny was adopted by the Smiths approximately 14 months after coming into care. She responded well to the combination of effective therapeutic intervention and a supportive and engaged adoptive family.

Conclusion

Many of the parents whose children enter foster care have themselves experienced abuse, neglect, and other forms of serious trauma. They may well have been through the foster care system as children. When children are wounded by traumatic experiences within their family system, and when these traumas

are not addressed, they can carry the scars for the rest of their lives. This damage can result in intergenerational trauma and abuse so familiar to experienced child welfare and Dependency Court staff. Substance abuse, domestic violence, relational problems, risk-taking behaviors, emotional lability, self-harming, anxiety, and depression are often the adult sequelae of significant untreated childhood trauma. In the past these were seen as standalone issues, contributing to the family dysfunction and were treated as such. Through the groundbreaking work of Bessel van der Kolk and many others, systems that work with these families have come to recognize that these diagnoses are secondary effects cascading from the primary experience of complex childhood trauma. In the past, these effects were identified and treated in isolation from the root cause, ignoring the deeper wounds from which they spring. With the source of dysfunction left unaddressed, secondary problems emerge as needed, albeit negative, coping and survival skills that insulate parents from the pain of the source trauma. This behavior is often perceived by CPS and other support services as "self-sabotage." As long as these parents are caught in this cycle, they remain unable to develop the skills needed to be good enough caregivers for their children. It is essential to understand, assess, and treat these symptoms holistically: that is, to identify the parent's trauma history and to understand the secondary effects' functionality in relationship to their early traumatic experiences. By doing so, team members can more effectively support parents in their attempts to gain competencies needed to parent their children successfully. Focused attention on healing the parent's childhood trauma history can be accomplished concurrently with dyadic work supporting the child-parent dyad in the process of healing their relationship. When parents are supported through breaking the cycle of complex trauma, they become working models for their children and the source of their children's healing, rather than their pain.

Learn More

Don't Hit My Mommy! A Manual for Child-Parent Psychotherapy With Young Children Exposed to Violence and Other Trauma (2nd ed.)
A. F. Lieberman, C. Ghosh Ippen, and P. Van Horn (2015)
Washington, DC: ZERO TO THREE

Adverse Childhood Experiences Study
www.cdc.gov/violenceprevention/acestudy

National Child Traumatic Stress Network
www.nctsn.org/trauma-types/complex-trauma

Safe Babies Court Teams Project
www.zerotothree.org/maltreatment/safe-babies-court-team/

Child-Parent Psychotherapy
<http://childtrauma.ucsf.edu/manuals-and-books>

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Trauma and Boys, Birth to 3

What's Different?

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Abstract

This article considers infant and toddler boys' unique susceptibilities to caregiving inadequacies that might lead to trauma in their development. It does so by examining the results of research, which point to three areas where boys are likely to have particular difficulties—their slower developmental timetable, their different relationship with their mothers, and their tendency to externalize frustration and stress. The authors provide background to help home visitors and others who engage with caregivers around the problems of boys in infancy, childhood, and adolescence. They suggest that boys, especially when raised under trauma-inducing conditions in early childhood, often develop in ways that are different than girls raised under similarly inadequate circumstances. These early childhood influences persist into later life and may be seen in school failure, conduct disorders, and other boy-predominant psychopathologies.

Trauma inflicted from the caregiving environment on a young child can result in devastating lifelong psychological wounding and physical illness that may be suffered by both boys and girls (Edwards, Holden, Felitti, & Anda, 2003; Finkelhor, Turner, Hamby, & Ormrod, 2011). In this article, we limit our examination to the vulnerabilities more likely to be associated with trauma in infant and toddler age boys. One reason for looking at boys separately is that, to an increasing extent, infant mental health research finds that boys and girls in the first years show different susceptibilities to problematic caregiving (Zahn-Waxler, Shirtcliff, & Marceau, 2008). With this research in mind, our objective is to summarize some of the important findings about the tendencies more likely to be observed for boys.

In the following we will focus on the immediate parent-child relationship. This relationship takes place within a larger family, community, and societal context, which includes both harmful and protective features such as societal discrimination, low income, and unique cultural and religious elements, to mention a few (Schore, 2012; Shonkoff et al., 2012). To clarify our focus for this article—the circumstances that are more likely to affect infant and toddler boys—we examine the mother-child dyad almost exclusively. In doing so, we do not wish to convey the impression that we believe this central relationship exists in

a vacuum, separated from the larger environment affecting caregiving. For example, fathers have both direct and indirect (Fitzgerald & Eiden, 2007) effects on early social-emotional development that are both positive (Fitzgerald & Montanez, 2001) and negative (Fitzgerald, Wong, & Zucker, 2013) with respect to the organization of self-regulatory behavior. However, it is also a truism that during infancy and very early childhood, mothers account for the most direct and time-dependent caregiving for infants and toddlers. Thus, in this article, we focus more narrowly on attachment dynamics highlighting important areas in which boys' uniqueness may be illustrated, while knowing full well that fathers may be contributing to adverse mother-infant relationship dynamics (Fitzgerald & Bocknek, 2013).

To a significant degree the prevalence of developmental disorders differs, on average, by biological sex (Boyle et al., 2011; Holden, 2005; Kigar & Auger, 2013; Zahn-Waxler et al., 2008). For example, according to the Centers for Disease Control and Prevention, summarizing the most recent *Mental Health Surveillance Among Children, United States, 2005–2011* (2013):

Boys were more likely than girls to have most of the disorders, including ADHD, behavioral or conduct problems, ASD, anxiety, Tourette syndrome, and cigarette dependence, and



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Boys are less able to self-regulate and more in need of emotional and regulatory support from caregivers.

boys were more likely than girls to die by suicide. Girls were more likely to have an alcohol use disorder, and adolescent girls were more likely to have depression.

Increasingly, researchers studying these different patterns of disorders between boys and girls find that, in large part, they reflect gender differences in early neurobiological development in ways that can potentially affect emotional and social functioning (Grandjean & Landrigan, 2014; Kigar & Auger, 2013; Kunzler, Braun, & Bock, 2015; Martel, Klump, Nigg, Breedlove, & Sisk, 2009; McClure, 2000; Schneider et al., 2011; Schore, 2015; Weiss, 2011; Zahn-Waxler et al., 2008). In other words, when boys' different neurobiological structure and processes and their unique hormonal repertoire combine with early caregiving insult, the outcome is often likely to be somewhat different for them compared to the outcome for girls under similar circumstances (Schore, 1994). This article will describe three overarching conditions that are more likely to be experienced by infant and toddler boys. These conditions tend to render them differently susceptible to trauma in light of their unique neurobiological development. These conditions are: boys' slower developmental timetable, their unique relationship with the mother, and their proclivities to externalize frustration and anxiety.

The Slower Developmental Timetables of Boys

A growing number of studies of boys' neurological development further substantiates the well-established difference in maturation rates between boys and girls, particularly during the earliest years. This difference shows up, perhaps most notably, in small boys' behavior; they are less able to self-regulate and more in need of emotional and regulatory support from caregivers. Using the still face paradigm to assess infant-caregiver

interactions, Tronick (2007) concluded that 6-month-old boys of nondepressed mothers were more likely than were girls

to show facial expressions of anger, to fuss and cry, to want to be picked up, and to attempt to get away or distance themselves from their mothers by arching their backs and turning and twisting in their infant seats. Boys were also more oriented toward their mothers than were girls. Boys were more likely than were girls to display facial expressions of joy and to communicate with their mothers using neutral or positive vocalizations and gestures. By contrast, girls were more object oriented than were boys. They were more likely than were boys to look at and explore objects and to display facial expressions of interest. Furthermore, girls show more self-regulatory behaviors than did boys. (p. 340)

These behavioral differences reflect boys' pre- and post-natal neurobiological development. For example, Zahn-Waxler et al. (2008) noted "The curve of development of the frontal cortex, caudate, and temporal lobes in girls is considerably faster than in boys" (p. 279), reflecting their differences in maturation.

Other researchers have also studied infant boys' relatively slower neurological development in early childhood. McClure (2000) examined the question of whether infant boys have more difficulty recognizing facial expressions and might be hindered in responding to emotional interactions with their principle caregivers. Using findings from a meta-analysis, she proposed that the likely greater neurological development in the frontal cortex and amygdala of girls provides an advantage in the first years of life in their early relationships. Because they seem to be more capable in reacting to interactions with adult caregivers, girls appear to receive more positive expressions from their mothers. McClure concludes that innate neurological maturational rates of development combine with differentiated support from adult caregivers to result in girls, by and large, having a greater ability to process facial expressions.

Several theorists of psychological development have speculated that pre-natal and perinatal exposure to testosterone (Baron-Cohen, 2003; Geary, 2010; Knickmeyer, Baron-Cohen, Raggatt, & Taylor, 2005; Martel et al., 2009; McClure, 2000; Zahn-Waxler et al., 2008) may contribute to differential rates of maturation, particularly with respect to social-emotional development. They speculated that boys seem to show less bio-behavioral regulation as a result of their slower maturing nervous systems, delayed by testosterone exposure that may render males more vulnerable to early life stressful conditions such as might be encountered by inadequate caregiving.

In another proposed theory, Sandman, Glynn, and Davis (2013) based their analysis on the male fetus', on average, larger size and speculated that more resources seem to go into growth in males, leaving less available for other purposes. Their findings may account for a more limited male ability to adjust to adversity before and after birth. This approach suggests a biologically based difference, which appears to be related to a developmental-evolutionary strategy. Among the elements of this strategy are that at birth the number of males exceeds



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Female infants have been observed to have greater and more variable behavioral and biological repertoires.

the number of females, but males exposed to early adversity will likely suffer greater risk of fetal and infant morbidity and mortality. In contrast, female infants have been observed to have greater and more variable behavioral and biological repertoires. Sandman et al. referred to this as the “viability-vulnerability tradeoff:” male infants being larger and more numerous, but more vulnerable early in life, and females, though fewer in number, are more viable. It is well established that males suffer higher levels of morbidity and mortality in utero and after birth (Ingemarsson, 2003; Wells, 2000).

To conclude this section, we point out that ZERO TO THREE noted in its advice to parents on its website under “FAQs on the Brain” that “sex differences in the brain are reflected in the somewhat different developmental timetables of girls and boys.” It goes on:

By most measures of sensory and cognitive development, girls are slightly more advanced than boys: vision, hearing, memory, smell, and touch are all more acute in female than male infants. Girl babies also tend to be somewhat more socially-attuned—responding more readily to human voices or faces, or crying more vigorously in response to another infant’s cry—and they generally lead boys in the emergence of fine motor and language skills. (ZERO TO THREE, 2015)

This slower emotional development of boys, requiring that they be more reliant on their caregivers for help with their emotional regulation, means that boys may be at greater risk of suffering more from traumatic caregiving environments. This possibly greater vulnerability of boys in the first years of life may mean that boys are more likely to experience problems associated with inadequate caregiving and perhaps be more likely to suffer trauma inflicted from an adverse caregiving environment.

The Mother-Infant Son Relationship

Generally speaking, infant boys appear to have a different relationship to their mothers than girls. Under some conditions, as when a mother is severely depressed over a long period of time and less able to interact with her infant in a sensitive manner, this difference may be more likely to manifest in boys’ developmental disorders in a different way for reasons related to their slower developmental timetable. First, we will look at the mother-infant son relationship through the lens of psychoanalytic theory to establish the possible baseline phenomenon, and second we will look at this relationship from the perspectives of maternal depression and the consequences of maternal posttraumatic stress disorder.

As a psychoanalyst, who has written extensively about the development of the men in his practice, Diamond (2015) noted that among the psychodynamic issues that boys in early childhood are presented with is an unconscious identification with mother, who is fundamentally different from them. The deep effect that this may have on many boys may leave them susceptible to a host of problems. At base these come from their inability to comprehend their mothers’ otherness at such an early age, while nonetheless experiencing it. Diamond sums this up as a boy’s “primordial vulnerability” (p. 62): the primordially coming from its pre-symbolic form, occurring before it can be made conscious. Indeed, it happens so early in life that it is impossible to recall its origins. This plausible fundamental alienation of boy from mother is a base condition of being male. Hence, Diamond adds, a boy’s separation from his mother is likely to be more disruptive for him than for his sister as he finds a new internal equilibrium involving an identification with father—if there is a father—who apprehends this important role in his son’s life.

Many infant girls, on the other hand, have been observed to be more consistently related to their mothers. Chodorow (1978/1999), another psychoanalyst who has written about gender development, pointed out that “relational capacities that are curtailed in boys as a result of the masculine Oedipus complex are sustained in girls” (p. 93). However, the relative absence of relationality that Chodorow noted in young males seems to happen well before oedipal dynamics enter the picture at 3 and 4 years old. Hatzinikolaou and Murray (2010), for example, found a “similarity bias” that infant girls, as early as 4 months old, share with their mothers due to a girl’s “enhanced capacity for emotional regulation compared to boys” (p. 604), and with this, a greater ability for general relationality. At the same time, those mothers—who may be diagnosed as depressed, and who thus find their daughters more responsive to them—are able to relate emotionally more to their daughters than to their sons. On the negative side with regard to maternal depression, Hatzinikolaou and Murray speculated that in the first year of life girls may express an excessive sensitivity to maternal negative emotions while boys may block such emotional involvement. Both conditions can leave children at a distinct disadvantage: a girl might develop an overwhelming sensitivity to others, losing her own sense of self in the process, while a

boy could wind up cut off from an emotional understanding of others and of the feeling atmosphere around him.

The issue of the different reactions of infant boys and girls to their depressed mothers and the mothers' counter-reactions has received a great deal of research attention (Carter, Garrity-Roukous, Chazan-Cohen, Little, & Briggs-Gowan, 2001; Hammen, Hazel, Brennan, & Najman, 2012; Shaw & Vondra, 1995). For example, using the still face paradigm to assess dyadic relationships, Weinberg, Olson, Beeghly, and Tronick (2006) found that boys are more likely to be negatively reactive in the reunion episode and less easy to coax back into interactions. This suggests that boys tend to be more vulnerable to high levels of maternal depressive symptoms, challenging seriously depressed mothers' ability to give their sons the support needed to maintain interaction. In another article, Tronick and Reck (2009) concluded that "infant sons are more reactive to maternal emotions, are less able to control their own emotions, and require more regulatory scaffolding from their mothers than daughters—characteristics that make them more difficult interactive partners" (p. 149).

Shaffer, Yates, and Egeland (2009) found in a prospective study that boys who had been abused in early childhood were more likely than other children—including girls who had been abused in infancy—to be socially withdrawn in adolescence. They concluded that emotional abuse tends to turn boys away from relationships with others as a way of actively coping with these experiences and protecting the self from further emotional abuse. When this reaction extends to peer relationships, however, it can be maladaptive and psychopathic. Hence, "mother-initiated emotional maltreatment may be especially salient for boys" (p. 42).

Another example is a study by Murray et al. (2010) which demonstrated the relationship between the experience of maternal depression in infancy and low academic performance in adolescence. Their research found a connection with poorer cognitive functioning for boys—but not girls—in infancy and early childhood. In adolescence, the majority of boys in their study who grew up with depressed mothers did significantly worse on standardized tests in secondary school. They concluded that "boys are more vulnerable to the effects of maternal interaction difficulties" (p. 1157).

Turning to the question of maternal posttraumatic stress disorder and how this might affect boys, Barrett and Fleming (2011) described the mother-infant dance in which it helps if the mother falls in love with her infant. They further elaborate on this dance:

the nature of the mother-infant dance relies on the integrity of multiple physiological and behavioral systems and also on two maternal experiential factors, one proximal and one distal, that have a great impact on how a mother mothers: postpartum depression and early experiences. (p. 386)

Among the early experiences that may predispose a mother to have greater difficulty "falling in love" with her son than her daughter might include the possibility of the mother's early

sexual abuse by a male and her projection of the abuser onto her infant or toddler son. A similar negative maternal projection of a son's father onto a young boy has also been commented upon in the literature. In many fragile family situations with a single mother this possibility may carry quite negative associations (Amato, 2005).

Since Fraiberg, Adelson, and Shapiro's 1975 article, *Ghosts in the Nursery*, infant mental health advocates have become ever more aware of how trauma may be passed from one generation to the next. Between boys and their mothers there is sometimes a genderization added to this process of intergenerational transmission that affects boys in a particular way. For example, because of her experience of early abuse from a male figure, a mother may project sexual and aggressive behavior onto her toddler-age son far beyond the young boy's capacities. Lieberman (1996) wrote that it is not uncommon for single mothers with a history of abusive relationships with men to attribute to their young boys the same aggressiveness that they experienced from the boy's father. Instead of appreciating the young boy's need to be active, his behavior is condemned as aggressive and part of his (maternally projected) violent core that will ultimately lead to his becoming, in this projection, an abuser like his father. The possibility exists that this kind of maternal attribution can both distort the boy's sense of himself and also lead to his internalizing his mother's projection. In this way, the intergenerational transmission of trauma may move from mother to son (Fitzgerald et al., 2013).

In their treatment of this subject, Sroufe, Egeland, Carlson, and Collins (2005) discussed the experience of boys who were raised in the context of "boundary dissolution" between themselves and their mothers. Among the population of the prospective Minnesota Study of Risk and Adaptation, a pattern of "seductive care" (p. 115) by mother toward toddler son was observed in some dyads in which the mother had experienced sexual abuse in childhood from a male figure. The authors pointed out that this particular genderized system of relating was part of a larger pattern that they call boundary dissolution, which took different, also harmful, forms with daughters. They noted that with boys, boundary dissolution seems to have led to later serious behavioral problems in preschool and beyond.

Perhaps these types of projections onto young boys result in other maternal care deficits with relation to sons. For example, Bertrand and Pan (2013) have documented that for many boys, more so than girls, being raised in single mother families results in twice the rate of behavioral and disciplinary issues than boys raised in two-parent families. Further, boys from single-parent families are more than twice as likely to have been suspended from school by the eighth grade. Another of their notable findings, based on the American Time Use Survey of the U.S. Department of Labor's Bureau of Labor Statistics (2014), is that single mothers spend significantly less time with their sons when they are less than 3 years old than with their daughters of the same age. Other researchers looking at different data sources have similarly discovered that many sons growing up in single mother homes fare worse than their sisters and that the

problems seem to originate in the birth-5 years (Autor, Figlio, Karbownik, Roth, & Wasserman, 2015).

Boys and the Externalization of Frustration

Given their likely slower developmental timetable and their possibly different relationship with their mother, are boys in their toddler and preschool years more likely than girls to engage in aggressive, antisocial, and rule-breaking behaviors when they have experienced an insecure or disorganized attachment? Such behavior, as the result of externalizing frustration, could put boys more at risk for later developing the other problems such as school failure and conduct disorders often statistically associated more with boys than girls in adolescence.

A recent meta-analytic review of emotional expression in children found that boys demonstrated more externalizing emotions—anger, aggression, rule-breaking behaviors—than girls in the toddler/preschool age (Chaplin & Aldao, 2013). The authors of this study cited others who have called attention to boys' slower language development and self-regulation abilities as possibly creating this behavioral tendency of many boys.

In a longitudinal study of the attachment precursors of externalizing behaviors, Shaw and Vondra (1995) examined low-income families in which maternal depression was prevalent. They found that for boys, maternal depressive symptoms and low maternal involvement were associated by 3 years old with behavior problems. The authors speculated that boys act out trying to get a depressed mother's attention and in the frustration and anger come to externalize their negative energies.

Zahn-Waxler et al. (2008) pointed out that most of the psychopathologies of boys seem to involve externalization of energies, involving difficulty in regulating negative emotions, anger, and irritability. These include conduct disorder and attention deficit-hyperactivity disorder. As boys become older, those who have not had help from a sympathetic adult to effectively contain their disruptive energies are more physically active and have little tolerance for frustration. In their extreme form these externalizing pathologies manifest in school and later adult contexts as antisocial behavior (Granic & Patterson, 2006; Shaw, 2013). Zahn-Waxler et al. noted:

Even toddlers and preschool children can have serious externalizing problems, and sex differences are already present at this time. This suggests an even earlier onset that may need to be incorporated into developmental models. The delayed physical maturation and language development of boys, along with emotion regulation problems, may place young boys at greater risk than girls. (p. 282)

Hosseini-Kamkar and Morton (2014) placed the greater boy tendency to externalize in the context of parental investment theory of the sexual selection theory of evolution. That is to say, externalizing is related to behaviors that evolved in hominids long ago. Unlike females, males have an unlimited amount of gametes (sperm cells) and in the deep human past have confronted relatively little cost in spreading them around for

many pregnancies. Thus, human males have not evolved having to discriminate in terms of selecting mates and probably in other aspects of life. Indeed, many aspects of male behavior, in this evolutionary context, are enhanced by an absence of caution, such as the male (greater than female) tendency to take risks (Harris, Jenkins, & Glaser, 2006). In contrast, the extensive literature on behavioral inhibition confirms that females have a greater capacity to delay gratification. An often-cited manifestation of this is the marshmallow test. Mischel (2014) reported that female preschoolers were able to wait significantly longer than boys before eating and were more likely to receive the reward of an additional marshmallow for abstaining.

The following list enumerates some other research that further substantiates the boy proclivity to act out with consequences that often bring them further difficulties:

- A study of 1,364 children in the National Institute of Child Health and Human Development study found a significant relationship between insecure/disorganized attachment in early childhood and elementary school behavior problems for boys, but not girls (Fearon & Belsky, 2011).
- In a Dutch study, poor performance on tests of executive function at 4 years old was more likely for boys, but not girls, when maternal sensitivity tested low 2–3 years earlier. Boys who most act out their frustration are those who often suffer from insensitive caregiving (Mileva-Seitz et al., 2015).
- The disorganized pattern of fight or flight is more likely to be seen in boys in the Strange Situation (David & Lyons-Ruth, 2005).
- The 25-year Minnesota study of risk and adaptation from birth to adulthood concluded: psychosocial risks may push girls toward internalizing problems and boys toward externalizing problems (Sroufe et al., 2005).

In ending this discussion of boys' likely greater proclivity to externalize, we quote Tronick and Reck (2009):

We know from the literature on juvenile delinquency that boys commit many more crimes than girls, but there is no persuasive explanation for this phenomenon. Our research indicates that gender differences in infancy may already set the stage for this differential rate. The explanation, however, is not simply that boys are more aggressive than girls. Rather, boys have greater difficulty controlling their emotional reactions, and because of this difficulty they are more likely than girls to fail to accomplish their goals. (p. 154)

A Few Implications for the Future

Knowledge about boys' likely different developmental timetable, their different relationship with mother, and their proclivities to externalize should become part of the knowledge base of all who provide services related to infant children's well-being and carry out assessments of infants and toddlers. Further, this knowledge should also inform society's push to enroll more children in preschool, to keep children in those pre-

schools, and to develop early interventions to help parent-boy dyads to achieve better mental health and functioning.

Perhaps of even greater and more fundamental importance, we suggest that knowledge of the unique difficulties of infant boys needs to be part of the national discussion about the problems of boys later in life. For many years, U.S. society has considered the boy crisis (Tyre, 2006) as among the more prominent social problems in adolescence. It has shown up in the form of school failure, juvenile delinquency, and the rapid growth in such boy-predominant psychopathologies as attention deficit-hyperactivity disorder and autism spectrum disorder. At the same time, U.S. society has increasingly come to accept the early years as crucially important in the development of the person as evidenced by increasing expenditures on home visiting, preschool education, and infant mental health care, for example. Yet, there seems to be a disconnect between the understanding of these vulnerabilities in infancy—described in this article—and the kinds of problematic behavior adolescent boys exhibit later. We recommend that the understanding of the boy crisis come to be associated more with its infant mental health basis in which boys' difficulties figure in the ways that we have described above.



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At birth the number of males exceeds the number of females, but males exposed to early adversity will likely suffer greater risk of fetal and infant morbidity and mortality.

Learn More

Websites

Five Things to Know About Boys

www.childtrends.org/5-things-to-know-about-boys

A quick overview of the status of boys in the United States.

For Every 100 Girls ...

www.edweek.org/media/every100girls-32boys.pdf

An extensive display of data comparing boys and girls in the United States in health, education, and other social metrics.

Partnership for Male Youth

<http://partnershipformaleyouth.org>

Website concerned with adolescent and young adult male health issues.

The Santa Fe Boys Educational Foundation

<http://santafeboys.org/conference/conference-presentations>

Links to presentations from its November 2015 conference on "The Psychology of Boys at Risk: Indicators From 0-5"

Books

The War Against Boys: How Misguided Policies Are Harming Our Young Men

C. H. Sommers (2013)

New York, NY: Simon & Schuster

Guyland: The Perilous World Where Boys Become Men

M. Kimmel (2008)

New York, NY: Harper

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Making Sense of the Past Creates Space for the Baby

Perinatal Child–Parent Psychotherapy for Pregnant Women With Childhood Trauma

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Abstract

Childhood experiences of interpersonal trauma often leave a legacy of painful emotions and memories that can be especially destructive when adults transition to parenthood. In this article, the authors present a promising treatment approach, Perinatal Child-Parental Psychotherapy (P-CPP), adapted from evidence-based Child-Parent Psychotherapy (CPP) for trauma-exposed parents and young children. Like CPP, P-CPP addresses traumatic experiences and improves mother-child emotional attunement, but it brings this work to the prenatal period. A clinical case illustrates the core modalities of P-CPP and emphasizes how uncovering, making meaning of, and healing from childhood trauma has enduring benefits on prenatal and postnatal maternal and child well-being.

Pregnancy is a highly transformative period. In addition to bringing about emotional, behavioral, physical, and biological changes, it also serves as an intergenerational link and critical turning point in a woman's identity. The experience of navigating pregnancy and organizing expectations of motherhood is no small task, as it typically includes negotiating the dynamic interactions of genetic predisposition, relationship history, contextual support, sociodemographic factors, and cultural values. Pregnancy results in the birth of a new baby, a new mother, a new father, and a new family, but their development is rooted in past experiences and generations, as well as in present circumstances and the uncertainties associated with the outcome of the pregnancy. How the individual members and emerging family navigate these new identities through the creation of a new life is shaped in great measure by the woman's experience during pregnancy. Although the physical dangers posed by gestation and childbirth have decreased significantly in developed countries, a pregnancy evokes a woman's deeply rooted fears about body integrity and survival for herself and her baby that suffuse the psychological experience of the mother-to-be (Putnam et al., 2015).

A pregnant woman not only experiences her present body changes and anticipates the future, but she also references her own childhood experiences of care, which shape her expectations for motherhood (Lieberman, Díaz, & Van Horn, 2009; Slade, Cohen, Sadler, & Miller, 2009). Pregnant women with childhood histories of interpersonal trauma, such as maltreatment, loss, and exposure to violence, prepare for motherhood while needing to reconcile their perceptions of caregiver betrayal. Unresolved childhood trauma may have enduring effects on pregnancy well-being and intergenerational transmission of risk (Slade et al., 2009). Indeed, of 236 high-risk mothers who sought CPP after their children's exposure to a traumatic event, approximately one third of those mothers (37.7%; $n = 89$) reported experiencing trauma (e.g., physical abuse, sexual abuse, or violence exposure) in their own early childhood (from birth to 5 years old). These women were particularly likely to have experienced physical intimate partner violence (IPV) during pregnancy if their pregnancy was not planned, compared to women with early childhood trauma but planned pregnancies (Narayan, Hagan, Cohodes, Rivera, & Lieberman, in press). In addition, mothers' histories of childhood trauma

affected their perceptions of their children's trauma symptomatology after child trauma exposure (Cohodes, Hagan, Narayan, & Lieberman, 2016). These findings suggest that a history of early childhood trauma coupled with an unplanned pregnancy may lead to a higher risk of IPV victimization during pregnancy. The findings also underscore the legacy of childhood trauma in amplifying the risk for pregnant women's victimization and mothers' perceptions of their children's well-being.

Perinatal Child–Parent Psychotherapy

Perinatal Child-Parent Psychotherapy (P-CPP) is a prenatal adaptation of CPP, an evidence-based dyadic intervention for mothers and their children from birth to 5 years old that addresses intergenerational and current adversity and trauma affecting the dyad. CPP aims to strengthen the caregivers' emotional attunement, reflective processing, and attachment bonding with children by repairing the enduring sequelae of traumatic stress on the parent–child relationship (Lieberman, Van Horn, & Ghosh Ippen, 2005). P-CPP begins during pregnancy and incorporates an additional focus on the woman's awareness of bodily sensations, relaxation strategies, and self-care. Treatment goals include addressing maternal depression and posttraumatic stress disorder (PTSD), maladaptive internal working models of the child, and negative attributions of the baby that may be rooted in the mother's legacy of trauma or in current experiences of stress and violence in her intimate relationships.

For mothers with unresolved childhood trauma, their children's cries and bids for care may mirror their own recollections of unmet childhood needs and trigger painful, overwhelming emotions that make parenting their infants more difficult (Fraiberg, Adelson, & Shapiro, 1975; Lieberman et al., 2009; Slade et al., 2009). Often, these "ghosts in the nursery" come to life during pregnancy. A core objective of P-CPP is to acknowledge, process, and integrate these pathogenic memories before delivery of the baby to prevent their disruptive effects on maternal bonding and caregiving.

P-CPP includes five treatment modalities: psychoeducation; reflective developmental guidance; body-based interventions; trauma-informed and insight-oriented interpretations; and concrete assistance with problems of living and crisis intervention. Before treatment, pregnant women participate in a comprehensive assessment period with their clinician, during which the women report on lifetime adversity and trauma exposure, mental health symptoms (e.g., depression and PTSD), maternal–fetal attachment, parenting attitudes, contextual support, sociodemographic factors, and early experiences with caregivers. The assessment period is conceptualized as the foundational stage of treatment, in which the clinician strives to create a solid therapeutic partnership with the pregnant woman. Much emphasis is placed on creating an atmosphere of hope and possibility for new beginnings. Positive early experiences with caregivers are assessed with the Angels in the Nursery interview (Van Horn, Lieberman, & Harris, 2008), which uncovers benevolent memories of loving care believed to serve



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The experience of navigating pregnancy and organizing expectations of motherhood is no small task.

as protective factors against intergenerational transmission of maltreatment (Lieberman, Padrón, Van Horn, & Harris, 2005). A mother's "angel memories" can be points of reference for incorporating loving experiences from her own childhood into her parenting.

The therapeutic relationship that the mother and clinician develop during assessment unfolds over many months. The clinician uses the assessment period to explore how the mother's history might affect current and future attachment. Assessment ends with a feedback session that seals the commitment to work together until the infant is 6 months old or until the treatment goals are met. The case example illustrates how the different P-CPP modalities were deployed with a mother with extensive childhood interpersonal trauma, recent IPV, and ongoing mental health impairment.

Amanda's Story

Amanda was a Latin American woman in her early 30s who was referred by a medical social worker when she was 23 weeks pregnant.

Assessment Phase

During the assessment period, Amanda reported two painful childhood experiences. She vividly recalled her father pulling her mother's arm and throwing her to the floor when Amanda was 5 years old. Although she couldn't remember details beyond her fear and defenselessness, she ranked this episode as deeply affecting her current life. As if pulled back in time, Amanda described how her mind immediately returned to this terrifying early memory whenever she was victimized as an adult. Shortly after this episode, Amanda was sent away from her family to a boarding school until she was 14 years old. As part of the assessment, the clinician administered the Angels in the Nursery interview, asking Amanda to recall and describe a childhood memory of feeling loved, understood, or safe. Amanda was not able to recall any positive childhood memories.

Amanda's adult life also had episodes of adversity and trauma. She disclosed that her mother died unexpectedly in a farming accident when Amanda was 22 years old, although she minimized the meaning of this loss by saying that she was not close to her mother. She also experienced physical, verbal, and emotional IPV during her relationship with Daniel, the father of her two school-age children. After ending her relationship with Daniel, with the help of a support group for victims of domestic violence, she entered into another abusive relationship with Ismael, in which she felt humiliated and forced to have sexual intercourse.

Amanda had elevated depression, anxiety, and PTSD symptoms and endorsed attitudes that suggested developmentally inappropriate expectations of the unborn baby, a boy, low levels of empathy, and increased risk for punitive caregiving. She did not seem emotionally connected to the pregnancy and barely acknowledged her belly. Although she made great efforts to show that she cared for her baby, she seemed distracted and dysphoric. The clinician asked whether Amanda felt that the baby's intrauterine growth was proceeding normally because the referral from the obstetrics–gynecology (OB–GYN) clinic had mentioned that Amanda's doctor was concerned about the baby's growth trajectory. Amanda stated that neither she nor the doctor was concerned; she said, "Everything is going well." The clinician took note of this avoidant response as Amanda's effort to protect herself from anxiety about the baby's well-being and decided to postpone further exploration of this topic.

During the assessment, the clinician was able to see that concrete assistance with problems of living and crisis intervention would be a key modality throughout treatment. Amanda disclosed that, although she had initially left the relationship with Ismael, she was still communicating with him. Her children's father, Daniel, had also come back into her life because he wanted to see his children after many years of being away. The issue of establishing safety as an intervention, both for Amanda and for her baby, became a top priority. The clinician helped Amanda to develop and communicate boundaries with Ismael and encouraged her to meet Daniel in public places. The clinician also supported Amanda by helping her write a letter to qualify for subsidized housing and navigate the complicated documentation process. The clinician provided tailored referrals, including therapy for Amanda's older children and psychiatric consultation for her ongoing depression.

In addition to concrete assistance, the clinician provided psychoeducation about IPV during assessment, because she deemed Amanda to still be at risk, despite her denial of current victimization. In addition to discussing with Amanda the harmful effects that IPV can have on the mother's physical and emotional well-being and on the developing fetus, the clinician explained how many of the symptoms of anger and anxiety that Amanda described could be the sequelae of the chronic IPV she had experienced.

The clinician also used reflective developmental guidance during the assessment phase. She described the emotional changes associated with pregnancy, helping Amanda to



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A mother's "angel memories" can be points of reference for incorporating loving experiences from her own childhood into her parenting.

anticipate bodily changes and link bodily sensations to fetal growth and activity. She also worked with Amanda to create a birth plan—including who would be with her during delivery and who would care for her older children—well before the baby was due. The clinician and Amanda also planned for how Amanda would inform the clinician that the baby was born and how therapy would resume after delivery. These details provided a road map of the therapeutic alliance and assured Amanda that she could count on the clinician's support both before and after the birth.

Prenatal Treatment Sessions

This therapeutic alliance helped Amanda become attuned to the physical changes in her body, develop increased connectedness with the baby, and address her emotional life during prenatal treatment sessions. The clinician used body-based and mindfulness-promoting interventions, such as encouraging Amanda to notice the feelings and bodily sensations associated with pregnancy when they occurred in the moment. The clinician also taught Amanda relaxation techniques to prepare for delivery and to help her body relax when she had intrusive thoughts about the past. Amanda began to "give voice to her baby" by talking to him when he moved inside of her. As Amanda started to become more aware of her baby's daily movements, she finally admitted, "My belly is not growing."

Amanda elaborated that the doctor was indeed worried because the fetus was not gaining weight appropriately. The clinician and Amanda explored Amanda's use of minimization as a coping strategy—denying that there was a problem and reassuring others that "everything was fine," when, in fact, both she and her doctor were concerned. This link allowed Amanda to open up and access past experiences: "When I was a child, I felt so lonely. Nobody took care of me when I was sick. So, I would always say, 'Everything is fine,' even though I felt sick." Lacking a consistent caregiver who could contain, reassure, love, and care for her, Amanda's minimization gave her some

semblance of control. As Amanda expressed these feelings, it became clear that her anxiety was interfering with her readiness for the baby's arrival. She disclosed that she did not know the identity of the baby's father, and she was so immersed in depressive, obsessive thoughts about this uncertainty that there was little space left for her to hold the baby in mind.

Amanda's emotional state highlighted the need for trauma-informed and insight-oriented interpretations to help her elucidate the origins of her depression and free her to establish an emotional bond with her baby. In response to the clinician's invitation to describe her life story, Amanda accessed deep feelings of rejection and abandonment from childhood. She remembered the pain she felt when her parents never visited her at boarding school or brought her home for the holidays. Amanda also revealed family secrets. As a child, her brother had told her that their father had disclosed to him that one of his daughters was not his real daughter; rather, she was the result of an affair that their mother had. Full of tears, Amanda narrated this story for the first time. She had never shared it with anyone. She felt confused and full of shame that she could be the daughter to whom her father referred.

The clinician spoke with Amanda about the parallel process that seemed to exist between her sadness about not knowing if she was the daughter of her father and her sadness about not knowing who her baby's father was. The clinician observed, "Amanda, it seems that you and your baby have something in common. Neither of you know who your real father is. I am wondering if your baby is feeling as lonely as you have felt, since his mommy has so many things on her mind that she is having difficulty thinking of him." Amanda burst into tears, as if this realization had given her a new understanding of herself.

Now Amanda was able to disclose her simultaneous romantic relationships. In addition to her relationship with Ismael, she was also involved with a man named Antonio, for whom she cared deeply. However, after Amanda had told him she was pregnant, he had revealed he was married. She was candid about how she felt about this dilemma: both sad and angry. She was also becoming more assertive with Ismael about communicating her boundaries, openly telling him when she didn't want to be intimate with him and reporting a positive shift in his response to her. Amanda also acknowledged that she had headaches when she thought about the baby's paternity and whom he would resemble when he was born. She said, "I don't think about my baby, and I don't talk to him because my mind is thinking about who the father is."

Remarkably, as Amanda's worries and painful memories unfolded, she was able to access her "angel memories" of being a child with her mother. She recalled, "I remember that I felt I was my mom's favorite. I was always with her even when she was

cooking or doing chores. We were so attached to each other. I used to go out into the field with her, and it was so difficult for me when we were separated." The clinician recalled Amanda's previous statement that, although her mother had died, Amanda had not been close to her. It seemed that as Amanda was making sense of her past, her defensive coping mechanisms were becoming less rigid.

Mothers with childhood trauma histories should be screened and provided with trauma-informed treatment to deter psychological impairment, IPV victimization, impaired caregiving, and intergenerational cycles of adversity.

As Amanda accessed her attachment to her mother, she was able to start connecting with her baby. With each session, the baby became more present in the room. With time, she started smiling more, sharing, "I talk to the baby every morning, and then my belly moves." Her tone changed from "I feel bad that I don't know who the baby's father is," to "I feel sad that the baby doesn't know who his father is." Amanda was making psychological and emotional space for her baby.

Toward the end of the pregnancy,

Amanda and the clinician focused on her preoccupation about whom the baby would resemble. Amanda feared that the baby would look like Antonio instead of Ismael. Ismael had been engaged in accepting paternity, regardless of what a test would say. The clinician and Amanda explored together whether Amanda wanted to pursue a formal paternity test so she could have peace of mind.

The Child's Birth

Amanda left a voicemail for the clinician, letting her know that the baby was born at 36 weeks, vaginally, and without complications. The clinician visited Amanda in the hospital and met Ismael and baby Marcos. The couple looked happy, and the baby was latching onto Amanda's breast. Amanda agreed that the clinician would call her every week to check in, and they would resume therapy in 4 weeks.

Postnatal Treatment Sessions

Amanda's fear had become true. Marcos looked like Antonio. She shared the news that Ismael had taken a paternity test, and they were awaiting the results. At the same time, Antonio had been trying to get in touch with her. Amanda felt confused and happy at the same time.

Amanda's ambivalence about her romantic relationships continued to be reflected in her relationship with her baby. She was involved with Ismael, but she had strong feelings for Antonio. During therapy sessions, Marcos was normally asleep, and she didn't interact much with him. When he awoke, she was physically responsive to his cues but not emotionally attuned. Amanda reflected, "I still think about other things, and I don't feel I'm giving my baby all the attention that he needs."

Finally, Amanda received the results and informed Ismael that he was not the baby's father. This helped Amanda decide that she didn't want to be with him. After many attempts, and as

the paternity became clear, Amanda was able to separate from Ismael. Amanda processed her feelings of gratitude toward him and acknowledged that she had been trying to stay with him because of the possibility that he was the baby's father and his eagerness toward her and her children.

Amanda started meeting with Antonio. She complained that he was not as involved with the baby as she would like him to be. The clinician and Amanda processed the feelings that were triggered by Amanda's perceptions of Antonio's inadequacy. Amanda cried while narrating that her father was never involved with her, just as Antonio didn't seem to be involved with Marcos, and how painful that felt for her. In another insight-oriented interpretation, the clinician observed, "Even though you don't have control over the feelings that Antonio has for Marcos or the extent to which he is involved with him, you have already changed Marcos' story by allowing him the opportunity to know who his father is."

The clinician connected this reframe to Amanda's attachment with Marcos and praised Amanda's efforts in physically providing for him. Gradually, as Amanda was able to work through her painful emotions, she also became more emotionally present with Marcos. During therapy sessions, she now lay on the floor and played with him. Marcos would respond by giggling. Amanda was increasingly able to read his cues and attune herself to him.

The prospect of applying for child support from Antonio uncovered deep links to Amanda's self-perceptions: if she were to receive payment and continue romantic involvement with Antonio, she would feel "like a prostitute." A liberating conversation followed about her mother. Amanda speculated that her mother might have been in a similar situation, caught between her relationship with her husband and her relationship with her lover. Amanda wondered whether her mother had chosen to be a wife to her husband rather than a mother to Amanda and whether that was the reason why Amanda had been sent to a boarding school. She also became increasingly aware that Marcos was a reminder of her own lack of a loving and present paternal figure. Amanda was able to talk in depth about the emptiness that she had always felt in her heart with regard to her father, and she was able to process the sadness and resentment about her father's lack of involvement in her life.

A large portion of the postnatal therapy focused on helping Amanda grieve her unresolved trauma and loss, including her wish that she had not been sent away, her inability to reconcile her feelings with her mother, the true paternity of her biological father, and her expectation of having a family with the man she loved, Antonio. Amanda continued to mourn these losses, both from childhood and the present, but her sadness did not impede her ability to move forward in creating a solid emotional bond with her new baby.

Six-Month Postnatal Assessment and Termination

The posttreatment phase of P-CPP also includes a comprehensive assessment when the baby is 6 months old to measure

domains of improvement, identify areas of ongoing need, help prepare for termination, and make referrals if continued care is needed. Amanda's assessment results indicated a marked reduction in depressive and PTSD symptoms. Marcos's development was progressing normally.

P-CPP is framed to last until the baby is 6 months old or until the treatment goals are met. Given that Amanda's symptoms had improved and the mother-child bond was flourishing, Amanda and the clinician decided together to terminate P-CPP. However, because Amanda reflected, "I want to continue working on me and understanding what I carry with me and bring to relationships," she and the clinician agreed that Amanda would continue to benefit from individual therapy, and a referral was made.

The clinician anticipated that termination would bring back residual feelings of rejection and loss, so they allowed for a termination process of 2 months. They discussed that it was normal for Amanda to feel sad and angry about terminating, especially since she had disclosed so many feelings and memories that she had never shared with anyone else. Amanda expressed anger that they were parting and sadness about the prospect of saying good-bye. Through tears, Amanda said, "I was really trying not to accept that I'm sad because I feel I need to be strong." The clinician responded, "Amanda, growing up you felt you had to be strong because you were by yourself. I know how lonely you must have felt, and now it is hard that a relationship with somebody who supports you and understands you needs to end. You don't need to just be strong. It is okay to also be sad, and it's also important to remember what we have learned together."

As always, they continued to make space for the baby. During one of the last sessions, Marcos awoke from napping, and the clinician said, "Marcos, your mommy and I are talking about feelings, how important it is to feel them, no matter how strong they are, and to talk about them with somebody that you trust. Your mommy wants you to learn that it is important to share your feelings and to remember your feelings are always important." Though she was addressing the baby, the clinician was also communicating with Amanda, validating her ability to acknowledge and express her emotions and reinforcing her self-esteem in relationships.

They ended the last session with a conversation about how painful the process of self-awareness can be, but also how rewarding. The clinician, Amanda, and Marcos, now 8 months old, took a picture together that each could hold on to when they missed one another.

Summary and Conclusions

One of the most striking observations about this case was that Amanda's unresolved childhood trauma and loss seemed to be directly linked to her capacity for emotional attunement with her baby. Her shame and secrecy about her father's identity were mirrored in her preoccupations with her baby's father's identity, and the grief and loss connected to her mother impeded her ability to connect with Marcos. Throughout the

early phases of treatment, Amanda relied on minimization and avoidance as coping mechanisms to manage painful emotions around the severed bond with her mother and the biological threat of growth retardation in the fetus. With the clinician's support, Amanda was able to gradually explore her early memories and eventually reveal the previously unspeakable secret that she might have been the product of her mother's adulterous relationship. "Speaking the unspeakable" is a core CPP principle based on the premise that suppressing the acknowledgment of painful events in one's life can lead to dissociative defenses, depression, and other forms of psychopathology. An important turning point occurred when Amanda connected her history of paternal uncertainty with the uncertain paternity of the baby and simultaneously reflected this anxiety while holding the baby in mind ("I feel sad that the baby doesn't know who his father is").

A central aim of CPP and P-CPP is to uncover deep-rooted strengths that, although hidden at first, may provide opportunities for resilience. Amanda's loving memories of her mother were buried under layers of perceived maternal abandonment and destructive family secrets. In our research and clinical work, we have observed that benevolent "angel memories" are often initially obscured by intrusive recollections of traumatic events that are more salient than positive memories. Preliminary empirical evidence from our program suggests that mothers who are able to hold onto detailed and rich "angel memories," despite histories of severe childhood trauma, are buffered against trauma symptomatology. Clinically, we believe that trauma-informed psychotherapy—particularly, the trauma-informed, insight-oriented, and emotional reprocessing strategies of CPP and P-CPP—helps to revive "angel memories" so that they can be freely accessed as growth-promoting forces to counteract ghosts in the nursery. Amanda's ability to recall the childhood bond with her mother after acknowledging her feelings of abandonment, shame, and uncertainty provides clinical support for this hypothesis.

P-CPP still awaits the gold-standard tests of efficacy and effectiveness that CPP has undergone (e.g., Lieberman, Van Horn, et al., 2005), but empirical and clinical evidence is promising. A recent study of 64 pregnant women victimized by IPV found that P-CPP was associated with improvements in depressive and PTSD symptoms 6 months postpartum and was particularly effective for women with low maternal–fetal attachment during the third trimester (Lavi, Gard, Hagan, Van Horn, & Lieberman, 2015).

In conclusion, observations from this case example and findings from recent research from our program (e.g., Cohodes et al., 2016; Narayan et al., in press) provide compelling support for the powerful and enduring effects of childhood trauma on emotional well-being during pregnancy and preparation for parenthood. Mothers with childhood trauma histories should be screened and provided with trauma-informed treatment to deter psychological impairment, IPV victimization, impaired caregiving, and intergenerational cycles of adversity. Whenever possible, screening and treatment should take place prenatally. P-CPP shows particular promise as a prenatal treatment approach, because it addresses the roots of destructive trauma representations and helps to make sense of childhood scars by uncovering benevolent relics that can serve as psychological resources for recovery and growth in parenthood.

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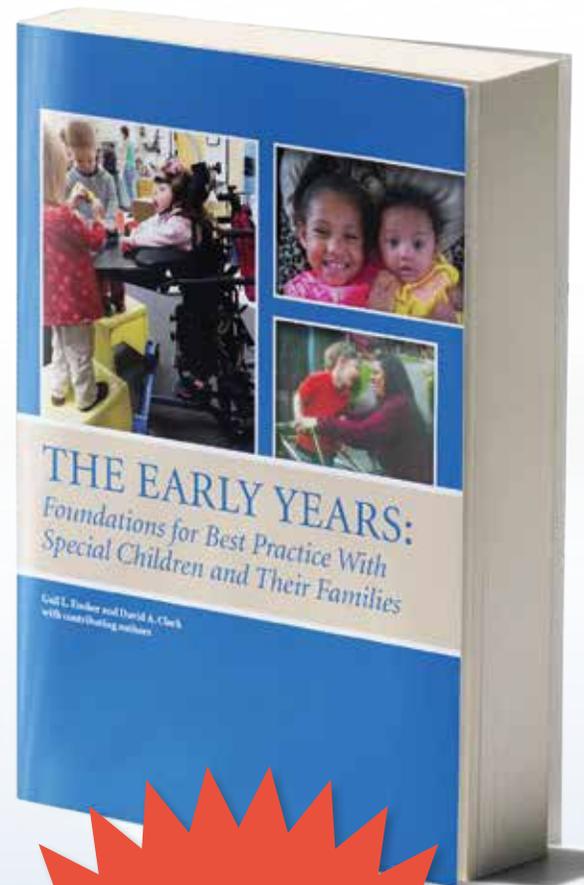
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The Trauma of Hurricane Katrina

Developmental Impact on Young Children

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Abstract

When expectant mothers are exposed to traumatic events such as natural disasters, their children are at increased risk for developmental and behavioral problems. Many people believe that young children will not be impacted by the traumatic experiences that occur during and following disasters. Therefore, planning for the youngest children at the time of disasters rarely occurs. In New Orleans area Head Start Centers in 2010–2011, during and following Hurricane Katrina, unexpected findings became apparent in developmental and social-emotional screenings. Assessments revealed that children born closer to Hurricane Katrina showed more developmental concerns than children born more than 2 years post-Katrina. Findings support the need for increased awareness and services for pregnant women and young children following disasters.

It has been well established that trauma and stress have negative impacts on individuals of all ages (NCTSN, 2008). Disasters, both natural and technological, represent an often unavoidable traumatic event influencing children and families. When exposed to disasters, pregnant mothers may be particularly vulnerable as stress levels may directly impact the developing fetus (Tan et al., 2009). Women who are pregnant are frequently faced with unavoidable stressors in their lives and may be unaware of the negative effects these events can have on their body and their developing child. For this reason, it is important that expectant mothers and their families develop a deeper awareness of the need to prepare in advance for potential stressful and traumatic events, such as natural disasters.

Maternal Prenatal Stress

Research has shown that stress plays a significant role during pregnancy and in the postpartum period (Grizenko, Fortier, Gaudreau-Simard, Jolicoeur, & Joobor, 2015; Osterholm, Hostinar, & Gunnar, 2012). In research on animals, it was found that when the mother was exposed to stress during pregnan-

cy, the infant was more likely to display unusual behaviors and have increased difficulty learning new skills as compared with animals of non-stressed mothers (Glover, 2011; Schneider & Coe, 1993; Thompson, 1957). More recent studies conducted on humans have also shown the negative effects of stress during pregnancy. For example, stress during the prenatal period has been found to increase cortisol levels, which may place the infant at greater risk for social-emotional, temperamental, and developmental difficulties (Sandman, Davis, Buss, & Glynn, 2012; Shonkoff et al., 2012). Davis et al. (2007) found that mothers whose cortisol levels measured high later in pregnancy were more likely to have infants who cried more often, were rated as fussier, and were more likely to show fear when presented with novel stimuli than infants of mothers with lower prenatal cortisol level. Cortisol-exposed newborns have also been found to present with poorer stress regulation compared to non-exposed infants (Davis, Glynn, Waffarn, & Sandman, 2011). Moreover, in a study of 178 mother-child dyads, higher prenatal levels of maternal cortisol and pregnancy-related anxieties predicted children's levels of anxiety when measured between 6 and 9 years old (Davis & Sandman, 2012).

Prenatal Stress and Developmental Issues

During gestation and in the early years of life, the brain of the fetus and the newborn grows and develops rapidly. Researchers are finding that early experiences during pregnancy and in the first years of a child's life can have a significant impact on brain development (National Scientific Council on the Developing Child, 2007). In addition, studies have also found relationships among prenatal maternal stress, reductions in gray matter volume in the brains of infants and children (Buss, Davis, Muftuler, Head, & Sandman, 2010), and impaired cognitive development in children (Zhu et al., 2014). Maternal stress during prenatal development has also been linked to motor problems and learning disabilities (Sandman et al., 2012). In a study examining the extent to which prenatal maternal stress impacted the infant's motor functioning, infants of mothers exposed to stress later in the gestational cycle had lower bilateral coordination and visual-motor integration scores than infants of non-stressed mothers (Cao, Laplante, Brunet, Ciampi, & King, 2014).

The cumulative effects of trauma and stressors also negatively affect a pregnant woman's mental health (Dunkel Schetter & Tanner, 2012). Research shows that when a pregnant woman struggles with mental health issues, it can negatively affect the attachment relationship and her ability to respond sensitively to infant cues (Tambelli, Odorisio, & Lucarelli, 2014). Mothers with depression and posttraumatic stress symptoms are also more likely to report difficult infant temperaments (Tees et al., 2010), which may increase the already stressful role of parenting (Misri et al., 2010). For example, mothers who reported higher levels of anxiety and stress during the prenatal period had children who experienced more problems with attention and behavior at 4 years old when compared to children of mothers who reported less anxiety (O'Connor, Heron, & Glover, 2002).

Natural Disasters and Child Outcomes

Previous studies on natural disasters have connected traumatic stress and negative outcomes for parents and their children (J. D. Osofsky, H. J. Osofsky, Weems, King, & Hansel, 2015). Following the large 2008 earthquake in China, the stressful event was associated with subsequent birth complications, including significantly higher rates of low birth weight, preterm birth, birth defects, and lower Apgar scores (Tan et al., 2009). In addition, research following the devastating 1998 ice storm in Quebec found that children whose mothers were pregnant at the time of the storm and experienced extreme stress engaged in more immature play and had significantly lower IQ and receptive vocabulary skills at 5 years old than children whose mothers experienced less stress (King, Dancause, Turcotte-Tremblay, Veru, & Laplante, 2012; King & Laplante, 2005; Laplante et al., 2004, 2008). Other studies have shown similar effects on young children who are prenatally exposed to natural disasters, who present with deficits in behavioral, cognitive, and language functioning in early childhood (Kinney, Miller, Crowley, Huang, & Gerber, 2008).

Hurricane Katrina

In 2005, families living in the New Orleans area experienced an unexpected and unprecedented stressor in their lives. Hurricane Katrina made landfall on August 29, resulting in significant damage and destruction. In the New Orleans metropolitan area, winds and heavy rains combined with the breaching of the levees resulted in flooding of 80% of New Orleans (Knabb, Rhome, & Brown, 2006). Families experienced different levels of severity in terms of their exposure to Hurricane Katrina. A study of more than 6,000 youth within 2 years following Hurricane Katrina found that many families experienced storm-related neighborhood destruction (89%), displacement (87%), parental unemployment (38%), personal belongings destroyed (67%), and family members/friends killed (12%) or injured (16%; H. J. Osofsky, J. D. Osofsky, Kronenberg, Brennan, & Hansel, 2009). A number of studies have found that survivors of Hurricane Katrina experienced increased mental health symptoms such as posttraumatic stress, anxiety, and depression (Centers for Disease Control and Prevention, 2006; Galea, Tracy, Norris, & Coffey, 2008; Harville, Xiong, Pridjian, Elkind-Hirsh, & Buekens, 2009; Harville et al., 2011; Kessler et al., 2008; Kronenberg et al., 2010). The degree of loss and disruption associated with the disaster effectively changed the face of mental health needs for children and adults. For most parents whose children were born in the months following Hurricane Katrina, the level of stress was higher than is usual for new parents.

Infant Mental Health Head Start Consultation Program

At times, the repercussions of disasters may not be immediately apparent or noticeable in the years following the traumatic event. In New Orleans area Head Start centers, post-disaster effects were not seen until routine developmental and social-emotional screeners were conducted on young children. The Infant Mental Health Head Start Consultation program at Louisiana State University Health Sciences Center (LSUHSC) Department of Psychiatry was funded by a local foundation developed to assist Head Start programs operated by Total Community Action, Incorporated, in understanding, identifying, and treating developmental concerns in young children. One of the primary activities was assisting the centers with completing federally required developmental screenings for young children who attend their schools. LSUHSC provided this assistance during the 2010–2011 academic year when all students attending Head Start and Early Head Start centers were screened using two age- and developmentally appropriate well-validated screening instruments—Greenspan's Social-Emotional Growth Chart (Breinbauer & Casenhiser, 2007; children < 42 months old) and Ages and Stages Questionnaire: Social Emotional (Squires, Bricker & Twombly, 2002, 2004; children > 43 months old). Developmental concerns were identified as scoring in the *possible challenges* range on the Greenspan and scores > 70 on the Ages and Stages: Social Emotional. As part of screening and the grant protocol,

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Hurricane Katrina made landfall on August 29, 2005, resulting in significant damage and destruction.

LSUHSC made follow-up appointments with parents, guardians, teachers, and/or Head Start directors for all children with scores suggesting developmental concerns.

A total of 1,060 students were screened when children were between 6 weeks and 5 years old ($M = 3.4$, $SD = 1.1$). Of the children screened, 18% ($n = 192$) met criteria for possible developmental concerns. When the results were analyzed, interesting findings emerged that identified a clear delineation between children who were in utero at the time of Hurricane Katrina and those who were born in subsequent years, $t(332.64) = 3.50$, $p < .001$. Based on the stresses, anxiety, and disruption caused by a disaster, it was not surprising that the social-emotional and developmental school screeners administered at Orleans Parish Head Start Center indicated that children born within 24 months following Hurricane Katrina experienced more developmental concerns than children born more than 2 years post-Katrina, $t(x^2(1) = 59.09$, $p < .001$). All of these children were from families who were living in New Orleans at or below the poverty line during the time of Hurricane Katrina.

Future Considerations of Disaster-Related Trauma on Young Children

Disasters and subsequent recovery stress, occurring during the prenatal period, like other traumas, can lead to increased risk for developmental, social-emotional, and behavioral problems. The results of the screening provided new insights into the role that Hurricane Katrina may have played for young children who were exposed to the disaster prenatally or during the recovery period. Given the relatively limited research on the longer term pre- and postnatal effects of disaster recovery, more studies are needed in this area. Future research could focus on developmental trajectories of young children as well as the influence of prenatal care and disaster- and recovery-related experiences. Although direct and indirect exposure to the trauma of disasters is negative for many children and families (DeVoe, Klein, Bannon, & Miranda-Julian, 2011; J. D. Osofsky, 2011b), it is essential to recognize that with protection and support, most children will be resilient (Masten, Narayan, Silverman, & Osof-



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Following the large 2008 earthquake in China, the stressful event was associated with subsequent birth complications.

sky, 2015; Masten & Osofsky, 2010). Further, research shows that a number of effective supportive services and treatments are available for young children and their families experiencing trauma that contributes to developmental concerns (J. D. Osofsky, 2011a). In addition to providing care and support for the normal concerns of the pregnancy and peripartum period, current study findings also support the need for supportive and stress-reduction services available for pregnant women and their young children following natural disasters (Harville, Xiong, & Buekens, 2009). More awareness is needed to bring attention to the potential for longer-term developmental concerns related to the trauma of disaster exposure even for young children who did not directly experience a disaster or those born into an area under recovery.

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A Framework for Trauma-Sensitive Schools

Infusing Trauma-Informed Practices Into Early Childhood Education Systems

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Abstract

Traumatic experiences are common in early childhood and may have enduring consequences on health and development. Cost-effective and developmentally appropriate interventions are needed to support the educational success of children affected by trauma. The Supportive Trauma Interventions for Educators (STRIVE) Project emphasized strategies for teachers to support social-emotional learning through the use of classroom-specific strategies and activities and a toolbox of resources to help students regulate their emotions while remaining in the classroom. This cost-effective and scalable intervention may provide needed supports to children and educators and therefore may be suitable for replication.

Childhood trauma is a significant public health threat that adversely impacts health and social, emotional, and cognitive development. In the United States an estimated 26% of children will witness or experience a traumatic event before they turn 4 years old (National Center for Mental Health Promotion and Youth Violence Prevention, 2012). National data suggest that 1 in 4 children who attends school has experienced a traumatic event (National Child Traumatic Stress Network, 2008). This number is even higher for youth residing in socioeconomically disadvantaged neighborhoods and racial/ethnic minority youth who are at increased risk for chronic or ongoing exposures (Buka, Stichick, Birdthistle & Earls, 2001; Finkelhor, Turner, Shattuck, & Hamby, 2013; Richters & Martinez, 1993).

Disparities in exposure to adverse childhood experiences may contribute to academic inequities, commonly referred to as the achievement gap.

A growing body of research evidence supports the association between social adversities and suboptimal learning, behavior, and performance in school that begins during the early childhood years. Traumatic experiences may directly affect memory, language, emotional, and brain development, all of which interfere with mastery and acquisition of new skills (Child Welfare Information Gateway, 2015). Exposure to multiple adverse and traumatic childhood experiences has been shown to be associated with poor attention and impulse control, difficulties regulating emotions, aggression, and self-harming

behavior that impedes children’s ability to interact with others and function in the classroom (Chu & Lieberman, 2010; Cole, Eisner, Gregory, & Ristuccia, 2013). Chronic exposure to trauma can also result in young children experiencing a sense of low self-worth, difficulty trusting others, and misperceiving the intentions and cues of others (Cook, Blaustein, Spinazzola, & van der Kolk, 2003). As a result of these difficulties, children with histories of violence exposure may become stigmatized and excluded by peers due to the dramatic nature of their behavioral challenges.

Experiencing chronic trauma during the early childhood years can be particularly detrimental as the time period between birth and 5 years old is a critical time for growth and development of the brain. It is during this time that the brain is most impressionable to adverse experiences (National Scientific Council on the Developing Child, 2005/2014, 2010; Shonkoff, Boyce, & McEwen, 2009). As a result of the significant neurobiological, social, emotional, and cognitive effects of chronic trauma exposure, it is particularly important to intervene early to promote optimal development and success.

Traditional systems of education have not been structured to address the unique needs of children who have experienced trauma. While there are increasing initiatives to implement programs and services that address these kinds of social-emotional and psychological concerns among elementary, middle, and high school students, initiatives are lacking for children under 5 years old. Early childhood programs are often ill-equipped to manage the kinds of challenging behaviors that children exposed to traumatic events exhibit in the classroom and lack the understanding and training needed to intervene effectively (Osofsky & Lieberman, 2011). Professional development programs for educators have not yet systematically incorporated psycho-education on childhood trauma and how it impacts behavior and learning or classroom-based

strategies to promote optimal learning among children with a history of trauma.

In this article we discuss a pilot intervention, Supportive Trauma Interventions for Educators (STRIVE), aimed at helping schools and early education systems of care increase their capacity to identify, respond to, and optimally support the unique needs of young children who have been impacted by trauma exposure. Uniquely, this is a universal intervention, delivered at the class level to all classroom students. We review the theoretical framework and collaborative process of developing the STRIVE model. We discuss preliminary findings about the impact of the STRIVE intervention on classroom climate and student-teacher interactions.

Trauma-Sensitive Education Approach and Framework

The current systems that most public schools use to educate their young students who have been exposed to trauma have fallen short in efforts to improve the academic success and social-emotional well-being of these students. Most existing models focus on the individual student, rather than student-teacher interactions. Few programs exist that take a comprehensive approach to address the multiple levels of intervention that are required to adequately result in sustainable and effective practice change. Many tiered models that encompass universal, targeted strategies and intensive supports generally focus on individual needs of children and do not take into account the resources and knowledge acquisition needed by teachers to support the optimal development of their students. An alternative approach is one that considers teacher and student needs as well as the overall structure of the school and its ability to meet the needs of children and their families impacted by trauma. The framework of STRIVE (see Figure 1) is

Figure 1. Supportive Trauma Interventions for Educators (STRIVE) Framework

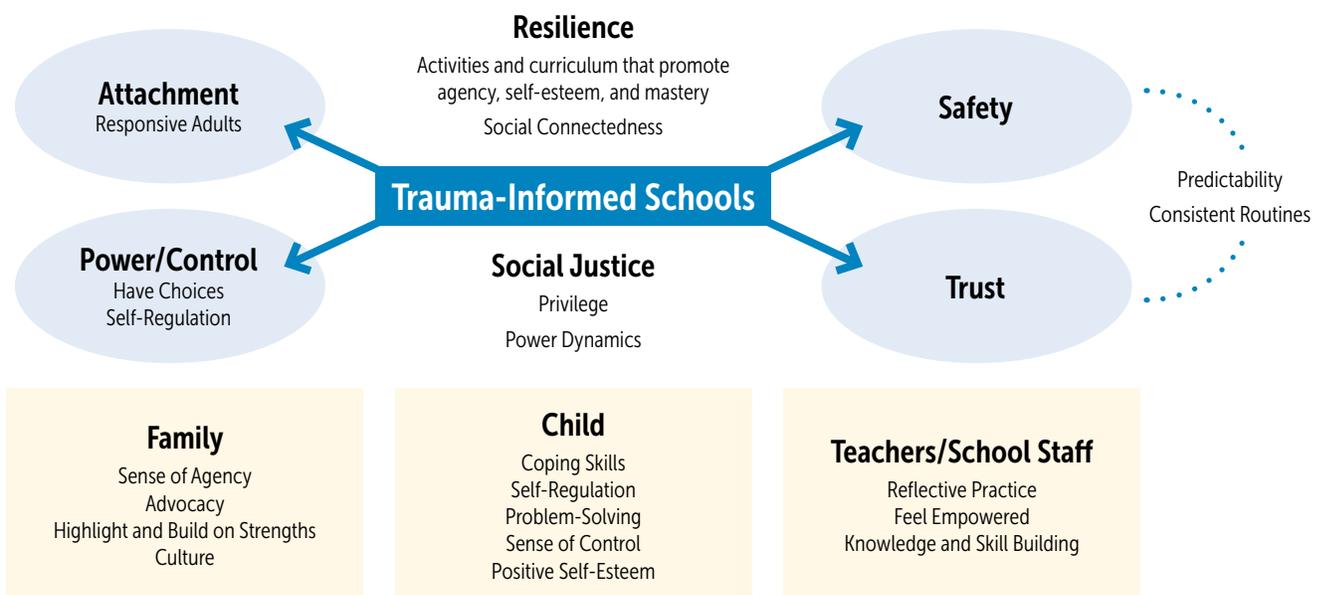




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Disparities in exposure to adverse childhood experiences may contribute to academic inequities, commonly referred to as the achievement gap.

unique in that it is resiliency-based and includes intervention at three different levels: individual student, teacher, and overall school.

Trauma impacts the way children view themselves, other people, and the world. Experiencing toxic stress has the ability to significantly impact the development of healthy attachment and the ability to feel safe, trust others, and feel a sense of power or control over one’s self and life. A trauma-sensitive classrooms framework takes this fact into consideration and results in systems creating policies and practices that empower, build resiliency, and support the optimal development of children and their families impacted by trauma. When children’s sense of safety and trust in the world and others is restored, and they feel a sense of agency, and they are able to heal and thrive. These and other protective factors can serve as buffers and help mitigate the negative impacts of experiencing trauma.

In the process of developing the STRIVE intervention, Vital Village Network helped support partnerships between the Child Witness to Violence Project and several Boston public schools. The goal was to collaborate with schools to help create a system of care in which everyone is trained to respond to a child’s needs using a trauma-sensitive approach (see Figure 2). For a school to become trauma-sensitive, there needs to be a shift in thinking about children’s behaviors from all staff working in the school including administration, teachers, paraprofessionals, and support staff. Helping staff understand and view behavior as communicating a need for a child rather than seeing the child’s behavior as willful or just a “behavior,” is one of the foundations of creating a trauma-sensitive school.

The STRIVE intervention provides information about the prevalence of trauma and the association with socioeconomic inequities and neighborhood opportunity structures. An emphasis is placed on raising awareness and understanding about the various ways in which systems can unintentionally re-traumatize children and their families. STRIVE also focused on the socio-political underpinnings of racism, oppression, privilege, and the interconnection to the philosophy of American

education systems of care that are structured around the values and beliefs of the dominant culture. The impact of such a system on children and its relation to trauma exposure are also discussed. By making teachers aware of the problem they can begin to understand behaviors from a social justice perspective and adjust their practice accordingly. Next, STRIVE provides psycho-education on the impact of trauma on health and educational outcomes, specifically by reviewing what is known about neurobiological processes. Then STRIVE provides teachers with this skill set and knowledge by discussing how trauma impacts children’s development and ability to self-regulate. Teachers are given suggestions and tools on how to address difficult behaviors in the classroom and are encouraged to use their own creativity to develop trauma-sensitive approaches.

Social and emotional connectedness is a buffer for traumatic events. What is known about trauma exposure and young children is that positive, caring, and supportive relationships with significant adults such as parents, grandparents, and teachers are paramount to help facilitate the healing process (Groves, 2002). Early childhood providers are in one of the most vital positions to (a) teach children affected by trauma exposure coping skills, (b) communicate that they care, and (c) respond in ways that are sensitive to the multiple traumas these children have likely experienced. Such trauma-informed approaches are growing nationally and have been supported by research evidence. When children feel they have a caring and supportive adult, they are able to feel more secure. The STRIVE intervention works with teachers to assure them that their relationship with students can help create resiliency and empowerment. Moreover, relationships that students have with their teachers can create an understanding of healthy relationship, which can help them be more successful with peers and later in life. Next, teachers are taught strategies to use in

Figure 2. A Trauma-Sensitive Approach in Education



the classroom to help children with self-regulation skills and managing their emotions. When children feel like they have the tools to self-regulate they have a sense of accomplishment and empowerment.

Core Principles of Intervention

The STRIVE intervention aims to help educators create an academic atmosphere that draws upon children's strengths to promote resiliency, efficacy, a sense of self-worth, and positive well-being, and to offer a multitude of opportunities for success. It is intended to be infused into the existing curriculum of the early childhood setting. Specific objectives include:

1. Increase teachers' and school personnel's understanding and awareness of various kinds of trauma that young children are exposed to and ways this exposure impacts their development and academic functioning and performance.
2. Provide teachers with concrete strategies and interventions that they can use in the classroom to support their students and address the behavioral challenges they may exhibit.
3. Improve young children's ability to access the curriculum by providing a supportive school atmosphere in which children can feel safe, encouraged, and a sense of agency.

This innovation is structured around five core components: attachment, safety, trust, power/control, and reflective practice. In order for children to begin to heal and thrive in the face of experiencing toxic stress, there must be a restored sense of trust, safety, and power and control in themselves, others, and the world in which they live. Healthy attachment is the hallmark of all future relationships. Teachers and early childhood educators play an important role in the healthy development of young children.

Attachment

Attachment is the building block to all future relationships. Research illustrates that when children who have experienced chronic trauma or toxic stress have positive, healthy, nurturing relationships with significant caregivers it contributes to their healing and ability to thrive. Such positive relationships help to shift a child's view of self, the world, and others in the world. Healthy attachments help to restore a child's sense of safety, trust, and power and control. Engaging in mutually reinforcing interactions serves as a protective factor by facilitating neural activity in the brain that can increase the likelihood of adaptive development of the stress response system (National Scientific Council on the Developing Child, 2010).

Resiliency

The ability to bounce back in the face of adversity develops when children feel safe, loved, and capable (National Child Traumatic Stress Network, 2008). Although children who have experienced trauma and adversity can be negatively impacted, they also come with several strengths and qualities that

serve as protective factors to build resiliency. Resiliency is built and maintained in the context of healthy nurturing relationships that are characterized by emotional attunement and cyclical interactions that communicate a sense of value and respect. Interventions that focus on the skills that children have—and use them as building blocks to intentionally teach self-regulation, problem-solving skills, and emotional literacy—will contribute to the academic success of children.

Reflective Practice

In order for professionals to truly be effective and impactful in the interactions they have with the children and families they serve, they must be honest and authentic about the thoughts, beliefs, and assumptions that influence their practice and the relationships they have with children and their families. Reflective practice provides teachers with the opportunity to reflect on their successes and challenges and aids in the prevention of burnout and vicarious trauma.

Program Development

STRIVE was developed through a collaborative partnership among Boston Medical Center Child Witness to Violence Project, Boston Public Schools, and Vital Village Network. The intervention aims to improve student success, specifically academic performance and attendance, by improving the quality of teacher-student interactions using an evidence-based, trauma-informed model. For several years, the Vital Village Network has collaborated with the Child Witness to Violence Project and the Orchard Gardens Pilot School to engage educators in a process of co-designing resources to support trauma-sensitive classroom environments. What emerged from that engagement process was a series of recommendations by teachers for more professional development on trauma and concrete strategies to use, leading to the design and piloting of an evidence-based curriculum accompanied by a classroom toolkit.

We conducted the pilot intervention among all kindergarten, first, and second grade classrooms at the Orchard Gardens Pilot School. This supported training of 12 educators, across 3 grade levels. Across the classrooms, approximately 250 students were included. The Institutional Review Board of Boston University Medical Center approved this study.

The STRIVE intervention consisted of the following components: (1) developing and implementing a training program for early childhood educators that provides psycho-education about the impacts of trauma on young children and ways to incorporate trauma-informed practices when addressing challenging and disruptive behaviors in the classroom; and (2) infusing a curriculum that promotes feelings of high self-esteem and efficacy among the children in this setting.

Training

Early childhood and elementary providers and administrators received 10 hours of professional development training aimed at building their capacity to foster resiliency and address the

unique needs of the youngsters in their classrooms. Trainings focused on increasing teachers' understanding of ways in which trauma can impact young children's physical, social, emotional, cognitive, neurobiological, and academic functioning. Training workshops also focused on (a) increasing these early childhood educators' understanding and awareness of reactions that are typical among children who have experienced traumatic events and (b) providing them with an understanding of environmental cues/events that may trigger a traumatic response from a child. In addition, these trainings also provided educators with concrete strategies and resources for managing challenging behaviors as well as preventative strategies. Teachers learn about the importance of establishing and maintaining positive, caring, and supportive relationships with their students that will instill a sense of trust, security, safety, and hope among the most vulnerable victims of trauma exposure.

Consultation and Coaching

As part of this intervention, teachers and administrators were provided with ongoing consultation and coaching to help them implement the trauma-informed strategies and practices they were taught. Interventions that include consultation and coaching have been found to be more effective than providing trainings in isolation as they are responsive to the teachers and students' needs, and they provide feedback about practice in context (Li-Grining et al., 2010; Mashburn et al., 2008). Coaching and consultation in the context of a supportive relationship also allows space for teachers to reflect on their practice and apply the knowledge and skills they are learning.

Toolkit

The STRIVE Toolkit (see Table 1) contains a set of concrete, hands-on tools that can help children learn how to identify and self-regulate their emotions. For instance, the toolkit contains a set of emotion flash cards that provide children with shared language around recognizing their emotions and talking about their feelings. The toolkit also contains various coping tools appealing to the different senses, including stress balls, noise-cancelling headphones, calming scents, and visual barriers, to name a few. With effective instruction and support from teachers and classroom staff, the STRIVE Toolkit components can teach children to identify and then regulate their emotions independently. Introducing these tools in the classroom and providing teachers with an awareness of trauma's effects on child development helps schools create a safe and supportive learning environment that not only reduces stigma and associated behavioral challenges for children with trauma history, but also optimally enhances socioemotional development for all children within school systems.

Program Evaluation

A combination of standardized and non-standardized measures and evaluations were used pre-intervention and post-intervention to evaluate the effectiveness of this intervention on children's functioning in the classroom, teachers' feelings about their knowledge of the impacts of trauma, and teachers' perceived level of confidence in their ability to implement trauma-informed practices in their interactions with students.

Student Statements

Qualitative statements from students reflected on the ability to identify and verbalize feelings and affective states.

- A kindergarten student said, "It makes me feel happy. When I feel happy, I go back to the group."

Students reported the ability to use multiple tools to address needs independently.

- "Sometimes I use putty when I get mad because sometimes people get me mad. Sometimes it makes me feel better, but sometimes, they do it all over again. That's when I use the headphones."

Students also endorsed the community-building aspects of the tools in terms of understanding emotions in other children.

- "If you're sad or mad, you can go and squeeze the squishy ball. Some people in this class have anger issues. If you squeeze the ball, the anger issues will get out of your body."

Table 1. Mean Pre- and Post-Intervention Scores for Quality of Relationships and Difference by Wilcoxon Rank Test

Domain	Baseline	Follow-up	p-value
Educational Support Domain	5.18	6.13	0.0002
Positive classroom climate	5.48	6.38	0.0015
Negative classroom climate	1.43	1.11	0.0078
Teacher sensitivity	5.48	6.5	0.0046
Respect for student perspective	3.18	4.75	0.0002
Classroom Organization Domain	5.47	6.14	0.003
Behavior management	5.41	6.23	0.0009
Productivity	5.84	6.38	0.0045
Instructional learning formats	5.16	5.79	0.004
Instructional Support Domain	2.48	2.46	0.69
Concept development	2.18	2.32	0.5
Quality of feedback	2.54	2.19	0.21
Language modeling	2.73	2.77	0.94

Classroom Assessment Scoring System (CLASS)

Classroom observations were conducted using the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008). Observations took place in each classroom on two occasions: prior to staff training and again several months after the training during the same academic year. The CLASS is a reliable and valid instrument used to assess the quality of relationships in the classroom environment between students and teachers. The CLASS has three domains: Emotional Support, Classroom Organization, and Instructional Support. Within these domains there are 10 dimensions. Scoring ranges from 1 (*low*) to 7 (*high*). The CLASS instrument assesses classroom environment, rather than individual students. CLASS observations were conducted by one certified observer (Meghna Nandi) to assess the impact of the STRIVE intervention.

Teacher Questionnaire

Teacher questionnaires were administered prior to the training series and at the end of the intervention to assess teachers' knowledge about trauma and its impacts on young children, trauma-informed strategies, and their confidence in their ability to implement strategies they had learned. The teacher questionnaires assessed teacher's perceptions of their own self-efficacy with respect to managing challenging classroom behaviors, identifying trauma, and responding to the needs of children with trauma. Moreover, the teacher questionnaire assessed teacher's perceptions of school-level efficacy. The follow-up questionnaire also assessed the perceived utility to the training and STRIVE toolkit.

Results

Twelve teachers participated in the STRIVE intervention. Of these, 81% were women and the majority (68%) were from 25–34 years old. The educators worked in approximately 12 classrooms. Two independent CLASS observations were conducted pre-intervention and post-intervention in each classroom by a certified CLASS observer.

We observed an increase in knowledge among educators comparing pre- and post-intervention self-report surveys. At baseline 56% percent of teachers felt they had a good idea of how trauma affects children's development whereas 80% of teachers felt this way at follow-up. At baseline, 75% of educators agreed/strongly agreed that they were aware of the effects of trauma on students' behaviors, as opposed to 90% at follow-up. However, we did not see a significant increase in knowledge of available resources from baseline (56%) to follow-up (60%).

Teachers also endorsed higher self-efficacy and confidence. Only 44% felt prepared to respond to children who have been exposed to trauma at baseline. At follow-up, 60% agreed that they felt prepared to respond to children who have been exposed to trauma. At follow-up, 70% of educators agreed/strongly agreed that the trauma-informed curriculum and professional development tools were an important investment of their time, and 60% agreed/strongly agreed that the trauma-informed classroom tools educators introduced help their students manage their emotions. Qualitative remarks from teachers indicated that the classroom resources (a) helped stu-

Table 2. STRIVE Intervention Toolkit

Tool	Topic/Goal	Directions for Use	
Coping Tools	Green barrier	Sight (<i>calming and focusing</i>)	The barrier can block out other visual stimulation and the green color can be soothing for children.
	Calming scent	Smell (<i>calming and relaxing</i>)	The scent can be soothing and relaxing to some children. The act of rolling it onto hands can have a massage effect.
	Low-pitched white noise	Sound (<i>calming and comforting</i>)	This low-pitched white noise sound is similar to the hum of a fan or buzz of a driving car and can be very calming and soothing for some children.
	Noise-cancelling headphones	Sound (<i>calming and focusing</i>)	Headphones will block out and muffle sounds in the classroom, thereby helping children calm themselves and refocus on the task at hand.
	Weighted lap pad	Touch (<i>calming and comforting</i>)	Provides deep pressure, proprioceptive input to muscles and joints, to allow better integration of input in the central nervous system to calm and regulate emotions.
	Kinetic sand	Touch (<i>calming and distracting</i>)	The opportunity to mold the sand creatively can be distracting and redirect their attention away from any stressors.
	Stress "eggs"	Touch (<i>tension release</i>)	Release stress and tension as they tighten and relax their muscles. Different levels of firmness for sensory preferences.
	Theraputty	Touch (<i>tension release</i>)	Useful for releasing tension and may serve as distraction because it can be molded into different shapes.
Express Emotions	Emotion cards	Feeling identification	Build a shared vocabulary to identify and express what they are feeling so that they can better self-regulate those emotions.
	Reflection journal	Identifying coping strategies	Provides children an opportunity to reflect and share their thoughts and concerns with their teacher.

Photo: © Kiwi Street Studios



Social and emotional connectedness is a buffer for traumatic events.

dents calm down with minimal transitions; (b) helped students de-escalate without interrupting the class, and (c) provided teachers with an intervention that allowed students to remain in the classroom. They felt the classroom-based materials were used by the majority of students in the class and therefore there was limited stigma, and the toolbox itself was neither a consequence nor an incentive. Teachers felt the emphasis on social-emotional learning helped create a more compassionate and accepting classroom climate. Students also expressed positive reactions (see box Student Statements).

Table 2 demonstrates changes in class scores over time, pre-versus post-intervention. CLASS scores are rated on a scale of 1–7. We observed statistically significant differences in the CLASS scores for two domains: Educational Support and Classroom Organization. There were also statistically significant differences in pre- and post-intervention CLASS scores for each sub-dimension for the Educational Support and Classroom Organization domains. The most significant differences were in Respect for Student Perspective, Positive and Negative Classroom Climate, and Productivity. No significant difference was observed in the Instructional Support domain or sub-dimensions, as predicted because our intervention did not address these interactions.

Discussion

Our preliminary findings support the impact of the STRIVE program on classroom climate and student-teacher interactions, as well as teacher knowledge and efficacy. Supporting schools to address the impact of trauma on learning by creating safe and supportive learning environments both reduces stigma for children with trauma history and associated behavioral challenges and optimally enhances socio-emotional development for all children within school systems. This project is unique in the sense that, rather than being expert-driven and focused, it places an emphasis on collaboration and co-design of the model by engaging educators at the beginning of the process and on iterative changes prior to piloting the program.

Because many young children spend the majority of their time in school or early childhood education settings, school-based interventions are critical to promoting optimal socio-emotional development. Positive, caring, and supportive relationships with significant adults such as parents, grandparents, and teachers are paramount to help facilitate the healing process for young children who have been exposed to trauma (Groves, 2002) by serving as protective factors that help to re-establish a sense of safety, security, and hope within these young children. Positioning early childhood educators to identify and intervene early may help foster the healthy development of these children.

There are limitations of our pilot study. The small sample size limits the generalizability of our findings. Because we worked with a relatively small number of classrooms, there are a very small number of teachers, making it difficult to evaluate statistically significant changes in efficacy. With consideration for these limitations, our study provides preliminary evidence for the impact of improving teacher education, resources, and classroom environments to better address the needs of children exposed to trauma.

Recommendations for Practice

Optimizing trauma-informed approaches within schools and early childhood education systems of care is possible and may help promote successful students, schools, and healthy communities. Building the capacity of teachers to support students by enhancing their understanding of trauma and its impact on learning and behavior is crucial. Supporting schools to address the impact of trauma on learning by creating safe and supportive learning environments reduces stigma for children with trauma histories and associated behavioral challenges, and optimally enhances socio-emotional development for all children in the classroom. Each of these are critical components to improving the educational success of all students. Below are some recommendations for educational systems to consider.

1. Schools and early childhood systems of care should be given a readiness assessment to determine whether they have the resources and time to engage in the curriculum. This readiness assessment would help schools begin the process of discussing whether it is feasible for their school to participate in the curriculum in a way that is most effective for their teacher and students. The level of investment from administration should be included in a readiness assessment to evaluate the degree to which administration will support teachers and staff. Changes that occur in a school need to be supported by senior administration so that all staff members can feel their work is appreciated and valued.
2. Cultural considerations should be woven throughout the curriculum. When cultures have been discriminated against and marginalized, they can pass down trauma symptoms from generation to generation. This phenomenon is referred to as intergenerational trauma. It is essential to provide teachers with the knowledge and understanding about how intergenerational trauma may

impact the way symptoms may be manifested in children and their parents. Although the children have not directly been impacted by trauma, they have learned ways to deal with stressful situations from their caregivers. If teachers are trained in recognizing intergenerational trauma they can approach the child's behaviors with a trauma lens.

3. Awareness of one's own culture and belief system can help with recognizing how they impact the way teachers respond to children. Trainings to bring cultural awareness to schools would help teachers become aware of how they support ethnicity and diversity in the classroom from the visuals displayed around the school to the opportunities they are given for professional development around issues related to culture.
4. Attachment to caregivers is a critical protective factor for children who have been exposed to a traumatic event. Incorporating parents in learning the techniques and tools their child may be using in the classroom will help parents continue to support their children in other domains. Supporting parents in understanding how trauma may impact their child's behaviors and emotional responses can help foster the parent-child relationship. Many times, caregivers underestimate how their children may be impacted by the violence they see or hear in their home or in the community. Giving caregivers psycho-education around their children's development can help caregivers feel empowered and competent in their abilities to care for their children.
5. Teachers' training is heavily focused on academics, but little of their education is focused on how to support children's social and emotional needs. This is an area that has been found to be problematic. "It is not only teachers' jobs to educate children," Colleen, a Boston public school teacher, stated, "it is their job to support a child's social and emotional needs." (C. Labbe, personal communication, February 4, 2016). Teachers often feel responsible for their students' emotional needs but are not given adequate training or resources to effectively address them. If teacher-training programs include ways to address trauma, teachers may feel more proficient in discussing issues related to trauma with students, parents, and administration.

Conclusion

Improving the health trajectory for children who have experienced trauma in early life remains an underaddressed issue that influences both health and educational outcomes. Our STRIVE intervention is a promising model that shows preliminary evidence for improving classroom environments and increasing teacher knowledge and self-efficacy with classroom management of behavioral issues and meeting the needs of children exposed to trauma. This is a low-cost intervention that can be easily implemented in school environments. Considering the high prevalence of exposure to adversities in early life, particularly for children in urban communities, a school-based inter-

vention is a promising method for reaching greater numbers of youth. In addition to the direct benefits of learned coping skills and improved communication strategies, the indirect benefit of supporting an inclusive classroom environment promotes optimal learning for all children. Infusing trauma-informed strategies and tools into the educational setting may help address some of the root causes of inequities in educational opportunity. Future studies should investigate the long-term impact of this program on educators and students, as well as the impact on classroom instructional hours and school performance.

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Meghna Nandi graduated from Washington University in St. Louis in 2014 with a bachelor of arts in anthropology and psychology. During her undergraduate career, she engaged in much community-based work and research around domestic violence intervention in both the United States and Chile, where she spent a semester studying abroad. After graduation, her interests in community health along with her desire to understand how to address the impact of trauma on health led her to a year of service as an AmeriCorps VISTA with the Vital Village Network where she helped pilot the STRIVE project. After completing her year of service, Meghna joined the Connors Center for Women's Health and Gender Biology as a research assistant. In the fall, Meghna will start medical school.

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Jargon Buster

Given the multidisciplinary nature of our work with infants, toddlers, and families, we often come across words or acronyms that are new or unfamiliar to us. To enhance your reading experience of this issue of *ZERO TO THREE*, we offer a glossary of selected technical words or terms used by the contributing authors in this issue. Please note that these definitions specifically address how these terms are used by the authors in their articles and are not intended to be formal or authoritative definitions.

Adverse Childhood Experiences (ACE) Study	The ACE Study is ongoing collaborative research between the Centers for Disease Control and Prevention in Atlanta, GA, and Kaiser Permanente in San Diego, CA. The co-principal investigators of the study are Robert F. Anda, MD, MS, with the CDC; and Vincent J. Felitti, MD, with Kaiser Permanente. More than 17,000 Kaiser patients participating in routine health screening volunteered to participate in the study. Data resulting from their participation reveals the health, social, and economic risks that result from childhood trauma. [Find it in Hudson, Beilke, and Many, page 4]
Complex Trauma	The term <i>complex trauma</i> describes the dual problem of children’s exposure to traumatic events and the impact of this exposure on immediate and long-term outcomes. [Find it in Hudson et al., page 4]
Perinatal Child-Parent Psychotherapy (P-CPP)	Perinatal Child-Parent Psychotherapy (P-CPP) is a prenatal adaptation of CPP, an evidence-based dyadic intervention for mothers and children from birth to 5 years old that addresses intergenerational and current adversity and trauma affecting the dyad. P-CPP includes five treatment modalities: psychoeducation, reflective developmental guidance, body-based interventions, trauma-informed and insight-oriented interpretations, and concrete assistance with problems of living and crisis intervention. [Find it in Narayan, Bucio, Rivera, and Lieberman, page 22]
Supportive Trauma Interventions for Educators (STRIVE)	Supportive Trauma Interventions for Educators (STRIVE) emphasized strategies for teachers to support social-emotional learning through the use of classroom-specific strategies, activities, and a toolbox of resources to help students regulate their emotions while remaining in the classroom. [Find it in McConnico, Boynton-Jarrett, Bailey, and Nandi, page 36]
The “Viability-Vulnerability Tradeoff”	The “viability-vulnerability tradeoff” refers to the fact that male infants are larger and more numerous, but more vulnerable early in life, and female infants, though fewer in number, are more viable. It is well established that male infants suffer higher levels of morbidity and mortality in utero and after birth. [Find it in Golding & Fitzgerald, page 12]



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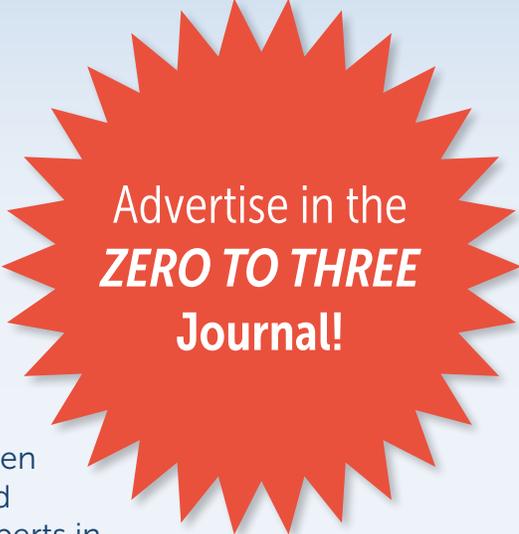
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