

A Multilevel Perspective on Child Maltreatment

October 31, 2014

For children, the effects of sexual, physical, and emotional abuse, and of physical neglect, continue long after the maltreatment ends. Over the past 35 years, Dante Cicchetti, McKnight Presidential Chair and William Harris Professor of Child Psychology and Psychiatry at the Institute of Child Development, University of Minnesota, has examined the effects of child maltreatment on multiple psychological and biological domains. His work has investigated the developmental pathways from abuse and neglect to psychopathology and also resilience.

In his award address at the 26th APS Annual Convention in San Francisco, Cicchetti, a 2014 recipient of the APS James McKeen Cattell Fellow Award, discussed how a focus on interdisciplinary and multilevel research is necessary to improve outcomes for abused and maltreated children.

“The field of developmental psychopathology is becoming influenced more by multidisciplinary perspectives. Not just psychology,” Cicchetti said. “Moreover, there also is movement towards incorporating neurobiological and genetic assessments into the design and evaluation of intervention.”

In 1977, Elizabeth Elmer, a prominent social work researcher from the University of Pittsburgh, published an influential book that compared the outcomes of three groups of children, most of whom were from impoverished backgrounds. One group had experienced accidental injuries but had not experienced abuse; a second group suffered from abuse and maltreatment; and a third group had experienced neither maltreatment nor accidental injury. The study’s conclusion — that socioeconomic status (SES) has an impact on child development as great as or greater than that of abuse — had a dramatic effect in reducing funding for research on child maltreatment, as it was thought that abuse was no more deleterious than were risk factors associated with low SES.

In contrast, Cicchetti’s research has found that maltreatment often has a uniquely devastating developmental impact that ranges from the cellular to the neural to the behavioral level.

Studies have found, for example, that abused children are far more likely to form insecure attachments with their primary caretakers. And studies from Cicchetti, as well as from APS Fellow Seth Pollak, have shown that abuse may impact the way infants and children process emotions at both the behavioral and the psychophysiological level. The researchers have found that physically abused children, when compared to their nonabused peers, detect anger earlier in a pictorial sequence and are more likely to impute anger that isn’t actually being displayed. Children who have been neglected can have difficulty differentiating among emotions. These behavioral issues often impact maltreated children throughout their lives, contributing to trouble with social information processing, poor peer relations, bullying, low scholastic achievement, and greater difficulties sustaining relationships as adults.

Abuse and neglect also leave their mark on a child’s biology. For example, physical and sexual abuse

can have profound implications for the way the body responds to stress. Working with colleagues Fred Rogosch, APS Fellow Megan Gunnar, and Sheree Toth, Cicchetti found that children who were physically or sexually abused very early in life — age 5 or younger — showed unique neuroendocrine dysregulation in the form of blunted cortisol.

“It seems that there may be a sensitive period where abused children are more likely — if they have high depressive symptoms and maltreatment — to display blunted cortisol,” said Cicchetti. This neuroendocrine dysregulation could have important implications for treatment.

In 2002, while he was the Director of Mt. Hope Family Center at the University of Rochester, Cicchetti “saw what was coming” with the advances of the Human Genome Project. He built a molecular genetics lab and started incorporating molecular genetic studies into his research. Over the past 4 years at the Institute of Child Development, University of Minnesota, Cicchetti has initiated epigenetic research into his studies.

This research has shown that variation in a number of studied candidate genes, in interaction with child maltreatment, is associated with or predicts various psychopathological outcomes, including internalizing and externalizing problems. The developmental timing and duration of maltreatment also have been shown to play important roles in gene–environment interactions. In a study conducted with Liz Handley, for example, Cicchetti found that a particular allele of the C-reactive protein (CRP) gene may be tied to lower serum levels of high-sensitivity CRP, an indicator of lower levels of stress and inflammation. Maltreated children with low levels of C-reactive protein also had low levels of internalizing symptoms.

In contrast, most studies examining how genes might interact with maltreatment to predict resilience have not been as fruitful. In a large multigenic study, Cicchetti found that only one gene, the glucocorticoid receptor gene (NR3C1), was associated with resilient outcomes in interaction with maltreatment. The remaining genes studied were predictors of resilience in nonmaltreated children, but not in maltreated children. It’s possible, Cicchetti says, that maltreatment may have overpowered any potential genetic effects.

Cicchetti describes resilience as a dynamic developmental process that can occur over time. In a promising randomized control trial, maltreated infants and their caretakers were assigned to various interventions in an attempt to improve their attachment relationships. At baseline, only about 3% of the children showed secure attachment, but after 1 year of intervention, 61% of children in the child–parent psychotherapy (CPP) group had developed a secure attachment. Their rates of attachment security were no different from nonmaltreated comparison children. Even 1 year later, the CPP group had maintained high levels of secure attachment.

Cicchetti emphasized that multiple-levels-of-analysis research on child maltreatment is necessary for continued scientific understanding, as well as for progress in policy, practice, and interventions. “We’ve moved to where the research since Elmer’s book is more advanced scientifically,” he said. “The field is increasingly conducting multilevel work with the goal of comprehending the organization of development in maltreated children across psychological and biological systems.”