

# Center for Family Development

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## CHILD ABUSE AND NEGLECT:

### Effects on child development, brain development, psychopathology, and interpersonal relationships

Arthur Becker-Weidman, Ph.D.

Neglect, physical abuse, and sexual abuse (broadly termed child maltreatment) have profound and long-term effects on a child's development. The long-term effects of chronic early maltreatment within a care-giving relationship (also called Complex Post Traumatic Stress Disorder) of a child can be seen in higher rates of psychiatric disorders, increased rates of substance abuse, and a variety of severe relationship difficulties. Child maltreatment is an inter-generational problem. Most frequently the perpetrators of abuse and neglect are profoundly damaged people who have been abused and neglected themselves.

There are clear links between neglect and abuse and later psychological, emotional, behavioral, and interpersonal disorders. The basis for this linkage is the impact that abuse and neglect have on brain development. Daniel Siegel, medical director of the Infant and Preschool Service at the University of California, L.A., has found important links between interpersonal experiences and neurobiological development.<sup>1</sup>

We know that a child uses the parent's state of mind to regulate the child's own mental processes. It is through a sensitive, responsive, and caring relationship with a primary caregiver that a child develops self-regulation abilities, emotional control, behavioral regulation, and such cognitive abilities as cause-effect thinking, among others. The child's developing capacity to regulate emotions and develop a coherent sense of self requires sensitive and responsive parenting. The National Adoption Center found that 52% of adoptable children have attachment disorder symptoms.

In another study, by Cicchetti, & Barnett<sup>2</sup>, 80% of abused or maltreated infants exhibited attachment disorder symptoms.

The best predictor of a child's attachment classification is the state of mind with respect to attachment of the birth mother. A birth mother's attachment classification before the birth of her child can predict with 80% accuracy her child's attachment classification at six years of age.

<sup>1</sup> The Developing Mind: Toward a Neurobiology of Interpersonal Experience. Daniel J. Siegel, Guilford Press, 1999.

<sup>2</sup> Cicchetti & Barnett, 1991.

That is a remarkable finding. Finally, recent research by Mary Dozier, Ph.D.<sup>3</sup> found that the attachment classification of a foster mother has a profound effect on the attachment classification of the child.

She found that the child's attachment classification becomes similar to that of the foster mother after three months in placement. These findings strongly argue for a non-genetic mechanism for the transmission of attachment patterns across generations.

Children who have been sexually abused are at significant risk of developing anxiety disorders (2.0 times the average), major depressive disorders (3.4 times average), alcohol abuse (2.5 times average), drug abuse (3.8 times average), and antisocial behavior (4.3 times average).<sup>4</sup>

Generally the left hemisphere of the brain is the site of language, motor activity on the right side of the body, and logical thought based on language. The right hemisphere of the brain is responsible for motor activity on the left side of the body, context perceptions, face recognition, interpersonal and emotional processing, and holistic perception. The orbito-frontal cortex (the part of the brain directly behind the eyes) is responsible for integrating emotional responses generated in the limbic system with higher cognitive functions, such as planning and language, in the cerebral cortex's prefrontal lobes. The left orbito-frontal cortex is responsible for memory creation while the right orbito-frontal cortex is responsible for memory retrieval. Healthy functioning requires an integrated right and left hemisphere. A substantial number of synaptic connections among brain cells develop during the first year of life into the middle of the second year of life. An integrated brain requires connections between the hemispheres by the corpus callosum. Abused and neglected children have smaller corpus callosum than non-abused children. Abused and neglected children have poorly integrated cerebral hemispheres. This poor integration of hemispheres and underdevelopment of the orbitofrontal cortex is the basis for such symptoms as difficulty regulating emotion, lack of cause-effect thinking, inability to accurately recognize emotions in others, inability of the child to articulate the child's own emotions, an incoherent sense of self and autobiographical history, and a lack of conscience.

The brains of maltreated children are not as well integrated as the brains of non-abused children. This helps explain why maltreated children have significant difficulties with emotional regulation, integrated functioning, and social development. Conscience development and the capacity for empathy are largely functions of the orbito-frontal cortex. When development in this area of the brain is hindered, there are important social and emotional difficulties. It is very interesting that the orbito-frontal cortex is sensitive to face recognition and eye contact. Maltreated children frequently have disorders of attachment because of their birth-parents lack of sensitive responsive interactions with the child.

Early interpersonal experiences have a profound impact on the brain because the brain circuits responsible for social perception are the same as those that integrate such functions as the creation of meaning, the regulation of body states, the regulation of emotion, the organization of memory, and the capacity for interpersonal communication and empathy. Stressful experiences that are overtly traumatizing or chronic cause chronic elevated levels of neuroendocrine hormones. High levels of these hormones can cause permanent damage to the hippocampus, which is critical for memory.<sup>5</sup> Based on this we can assume that psychological trauma can impair a person's ability to create and retain memory and impede trauma resolution.

<sup>3</sup> "Attachment for Infants in Foster Care: The Role of Caregiver State of Mind," *Child Development*, vol. 70, pp. 1467-1477, 2001.

<sup>4</sup> MacMillian, H.L., et. al., "Childhood Abuse and Lifetime Psychopathology in a Community Sample," *American Journal of Psychiatry*, vol. 158 # 11, pp 1878-1883, November 2001.

<sup>5</sup> McEwen, B., "Development of the cerebral cortex XIII: Stress and brain development – II" *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 101-103, 1999.

Abused and neglected children exhibit a variety of behaviors that can lead to any number of diagnoses. However, the effect of early abuse and neglect on the child can be seen in several critical areas of development. These areas include emotional regulation, behavioral regulation, attachment, biology, response flexibility, a coherent integrated sense of self across time, the ability to engage in affect attunement with significant others (empathy and emotional connectedness), self-concept, cognitive abilities and learning, and conscience development.

The effects of early maltreatment on a child's development are profound and long lasting. It is the impact of maltreatment on a child's developing brain that causes effects seen in a wide variety of domains including social, psychological, and cognitive development. The ability to regulate emotions and become emotionally attuned with another depends on early experiences and the development of specific regions of the brain. Early maltreatment causes deficits in the development of these brain regions, primarily the orbito-frontal cortex and corpus callosum, because of the toxic effects of stress hormones on the developing brain.

These findings strongly suggest that effective treatment requires a sensitive affectively attuned relationship. Siegel stated, "As parents reflect with their securely attached children on the mental states that create their shared subjective experience, they are joining with them in an important co-constructive process of understanding how the mind functions. The inherent feature of secure attachment – contingent, collaborative communication – is also a fundamental component in how interpersonal relationships facilitate internal integration in a child."<sup>6</sup> This has implications for the effective treatment of maltreated children. For example, when in a therapeutic relationship the client is able to reflect upon aspects of traumatic memories and experience the affect associated with those memories without becoming dysregulated, the client develops an expanded capacity to tolerate increasing amounts of affect. The client learns to self-regulate. The attuned resonant relationship between client and therapist enables the client to make sense (a left-hemisphere function) out of memories, autobiographical representations, and affect (right hemisphere functions).

<sup>6</sup> Siegel, 1999. p. 333