

Sensory Integration

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Trauma- and Attachment-Informed Sensory Integration Assessment and Intervention

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Occupational therapists commonly work with children with autism spectrum disorder, attention deficit disorder, learning disabilities, and other developmental disorders. Although many of these children have difficulties with sensory integration, they also may have trauma or attachment disorders that may or may not be formally identified. Early childhood trauma includes early loss or lack of consistent caregivers; emotional, physical, or sexual abuse; various forms of neglect; surgical procedures; and life-saving measures in the neonatal intensive care unit. This article reviews current issues related to trauma, identifies overlapping characteristics of trauma disorders and sensory modulation disorders, and discusses the occupational therapist's role in working with children who have experienced trauma.

The Effects of Trauma

Children who have experienced trauma have impairments across developmental domains, particularly in the area of social and emotional development (Cook et al., 2005). The social effects of early trauma may include difficulty or inability to develop and maintain friendships; alienation from or oppositional behavior toward parents, caregivers, and authority figures; and difficulty with trust, intimacy, and affection. These children also may lack empathy, compassion, and remorse; abuse substances; and perpetuate the cycle of maltreatment and attachment disorder in their own children when they reach adulthood (van der Kolk, 2005a).

As a result of the traumatic events, children often experience alterations in areas that are emotional foundations for development, including lack of trust in protective caregivers, loss of expectancy of protection by others, loss of trust in social agencies to protect, lack of recourse in social justice or retribution, and feelings of inevitability of future victimization (van der Kolk, 2005b). To begin life from this perspective is particularly devastating and difficult to recover from. Most children also will experience educational consequences through attentional and learning disabilities due to trauma, further complicating the child's profile (van der Kolk, 2005b). According to a synthesis of research on trauma and neglect, there is a measurably negative effect on the size and extent of integrative wiring in the brain areas responsible for arousal regulation (Schore, 2003). Traumatic events can shut down the functioning of

language areas and the prefrontal cortex when the brain is flooded with stress hormones accompanying threat; therefore, language-based psychotherapies may not be initially effective (Perry, 2007).

A new childhood diagnosis, developmental trauma disorder (DTD), is being submitted for consideration for inclusion in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000) and the *International Statistical Classification of Diseases and Related Health Problems* diagnostic manual (World Health Organization, 2007). This new diagnosis would differ from posttraumatic stress disorder (PTSD) in a variety of ways. PTSD criteria that a traumatic event involves actual or threatened death or serious injury, or threat to the physical integrity of self or others, limit the inclusion of many children who have experienced other forms of trauma. The new DTD diagnosis captures many attributes that are not part of the PTSD diagnosis, such as multiple or chronic exposure to traumatic events over critical developmental periods; complex disruptions of affect regulation; disturbed attachment patterns; rapid behavioral regressions and shifts in emotional states; the loss of striving to be autonomous; aggressive behavior against self and others; failure to achieve developmental competencies; loss of bodily regulation in the areas of sleep, feeding, and self-care; altered schemas of the world; multiple somatic problems; apparent lack of sense of danger and self-endangering behaviors; self-hatred and self-blame; and chronic feelings of ineffectiveness (van der Kolk, 2005b). In addition, the new DTD diagnosis acknowledges the ongoing and persistent nature of trauma, regardless of when and how frequently it has occurred.

One theory suggests that for children who have experienced trauma, memories of these events are not stored in storytelling narrative memory centers of the brain; rather, the trauma is believed to be experienced in the body as somatic sensations (Ogden, Minton, & Pain, 2006). Therefore, when the child experiences triggering events or sensations, physiological responses that manifested during the original traumatizing event may reoccur (Ogden et al., 2006). In a child who is typically developing, the role of the hippocampus is to record and file event memories, putting them into chronological order and perspective before they become consolidated as narrative memories in the left frontal cortex. For a child who has experienced a traumatic event, the "raw data" are thought to remain encoded in the amygdala and other limbic structures like a somatosensory photograph. Because the amygdala is the brain's regulator of emotion

and emotional behavior, the result may be increased sensitization to even very subtle affective and sensory reminders of the traumatic event, which may easily set off “false alarms” (Fisher, 2006).

Trauma and Sensory Modulation Dysfunction

Children who have experienced trauma, therefore, are vulnerable to living in a dysregulated state of arousal. Frequently, accompanying this dysregulation are symptoms of sensory sensitivity, such as hypersensitivity to sounds, touch, and movement. These symptoms can be accompanied by frequent experiences of flight, fight, or freeze (van der Kolk, 2005a). Children with DTD may become so overwhelmed by emotional triggers that they may dissociate and appear to be in a state that occupational therapists refer to as overload or shutdown. In severe cases, the child may lose complete track of his or her current surroundings. For instance, in the presence of a peer producing a toy gun on the playground, a child who is triggered by the sight of a gun may fall from a playground structure without using protective extension to break the fall, although protective extension may be present during routine play experiences that are nontriggering. If parents, educators, and occupational therapy practitioners are not trained to recognize the symptoms of trauma and dissociation, they easily can make incorrect assumptions about the child’s underlying problems, such as assuming that the problems are only occurring because of sensory modulation or sensory discrimination problems, postural inefficiencies, attention deficit disorder, seizures, or other childhood disorders or difficulties.

Why is it important to identify and differentiate the root causes of the overarousal and shutdown? If the state is caused by past trauma, the child may respond differently than a child with a sensory modulation disorder. For instance, a child with a trauma background may be triggered by specific smells associated with past abuse, sounds associated with impending abuse or neglect, or physical touch but not from touching inanimate items. A child with sensory modulation disorder, on the other hand, may be moved into a state of overarousal by specific categories of sensation, such as pungent odors or lumpy textures, light touch, or sounds of a certain frequency level, regardless of the object or person who produces the sound. It is important to consider these differences because the origin of children’s behaviors ultimately will affect intervention choices.

The Role of Occupational Therapists

How can occupational therapists assist children with traumatic pasts? First, it is helpful to educate team members about the impact of trauma. The Massachusetts Advocates for Children: Trauma and Learning Policy Initiative, in collaboration with The Hale and Dorr Legal Services Center of Harvard Law School and The Task

Force on Children Affected by Domestic Violence, has developed a report and policy agenda entitled *Helping Traumatized Children Learn: Supportive School Environments for Children Traumatized by Family Violence* (Cole et al., 2005), which is available on its Web site (www.massadvocates.org). Sharing this free, easy-to-read publication with team members and parents can be a useful starting point for any agency that works with children who have been traumatized. Second, it is helpful to use trauma and attachment symptom checklists to identify potential problems. The Trauma Symptom Checklist for Young Children and the Trauma Symptom Checklist for Children (National Child Traumatic Stress Network, 2003) are useful assessments that can be ordered online (www.nctsn.org/nctsn_assets/pdfs/measure/TSCC.pdf). Finally, it is also important to examine the attachment history for the child (Bricker, Squiers, & Twombly, 2002).

As consultants, occupational therapists can guide the multidisciplinary team to develop protective spaces in classrooms, referred to as quiet or peace corners. These areas are cozy and quiet with cushions to cuddle into, supportive bean bag chairs, limited visual input, headphones for listening to calming music, and other sensory comforts to allow a child with trauma to lower his or her state of arousal enough to be able to access instruction and social activities. In Massachusetts, a state-funded initiative provides grants for schools to develop a variety of trauma-sensitive school programs. Some schools have created a quiet area within one classroom for each grade, allowing all children in each grade level access to the calming spaces. As these areas have become embedded in the schools, children encourage one another to access the space to calm down when they witness peers becoming upset or aggressive. In another school, classical music has been substituted for the traditional bell that signals the change of classes. Drawing on the repertoire of sensory-based strategies that occupational therapy practitioners routinely use in their work can be helpful to children with trauma and attachment disorders.

As practitioners make sensory-based recommendations or design sensory diets for children, it is important to consider or observe what sensations might trigger a negative experience. For example, James is a 7-year-old who was beaten in the bathroom while the water was running to hide his screams. He now has difficulty being near running water and may benefit from using the teacher’s bathroom so he can control the running water. Sonya is a 10-year-old who was restrained during events involving sexual and physical abuse. She finds the use of weighted blankets terrifying, despite the fact that she seeks deep pressure touch in other ways for calming. As occupational therapists, it is important to remember that although sensory strategies may help to ameliorate behavioral symptoms of trauma and sensory modulation dysfunction, it is important to make clinical decisions based on observations of the child coupled with obtaining relevant history of trauma and attachment disorders when possible.

Fostering Relationships With Caregivers

Children with traumatic pasts and those frequently living in ongoing traumatizing circumstances may never have had the opportunity to learn regulation. As occupational therapists, we often speak of helping a child with self-regulation, but we each learn how to self-regulate through coregulation activities with our caregivers as young children. Studies of early development in primates and humans point to the centrality and necessity of a caregiver whose attention and activity are focused on supporting the young to not only survive, but also to thrive (Schneider, Roughton, Koehler, & Lubach, 1999). For children with trauma, attachment disorder, and sensory modulation disorder, we must create opportunities for coregulation if these have not been part of the child’s life.

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A key element in sensory integration-based occupational therapy is the establishment of a therapeutic bond with the child. Although it is important to adhere to the fidelity of sensory integration intervention (Parham et al., 2007), for children with attachment disorder, it is critical that their first truly intimate bond be to their parent or caregiver in order to promote healing from the deep wounds of a traumatic past. Children with attachment disorder often are known for their immediate and sometimes overly zealous or indiscriminate connection with new adults and their constant pushing away of their primary caregiver with many deeply hurtful advances.

Within an occupational therapy session, the dance of mutual enjoyment with sensorimotor play can be used to develop attachment with the primary caregiver. The occupational therapy practitioner then becomes a facilitator of the attachment relationship and coregulation activities between the parent and child, coaching the parent to engage in activities that typically may be led by the practitioner in other circumstances. Hughes's (2007) model of dyadic developmental psychotherapy incorporates the parents as the primary people to provide verbal and physical support, sources of food, and comforting touch during psychotherapy sessions. Elements of this model can be adapted to include in occupational therapy sessions.

Parents who have suffered their own significant interpersonal traumas may be parenting children with trauma and may or may not be able to join in the sessions without first receiving their own psychotherapy. When it is possible for them to be involved, participation in a nonjudgmental sensory-attuned treatment process can be healing and transformative to both parent and child.

Working With Other Professionals

Ayres (1972) wrote in her pioneering book, *Sensory Integration and Learning Disorders*, a timeless chapter on the art of therapy. She stated,

As the natural developmental association between sensory input and psychic experience becomes better understood, the two forms of therapy may profit from joining forces. What is rocking and being cuddled other than tactile and vestibular stimulation plus an interpersonal relationship? Are not the neural traces for the sensory and the social aspects of the experience laid down as one in the brain? Are not many of a child's important emotional experiences in the first five years of life closely associated on an experiential and therefore neurological basis with their sensorimotor equivalents? (p. 266)

Evidence of this evolving understanding is beginning to emerge. In psychiatry (Cheng & Boggett-Carsjens, 2005) and in speech-language pathology (Atchison, 2007), clinicians are combining sensory integration assessment and treatment with more traditional approaches to serve children with traumatic backgrounds.

At the Trauma Center at Justice Resource Institute (Brookline, MA), Elizabeth Warner, PhD; Anne Westcott, LICSW; myself; and other psychologists and social workers are involved in the development of a new model referred to as SMART (Sensorimotor Art Research Team) that combines sensory integration, art therapy, sensorimotor trauma principles, and child trauma principles into an integrative psychotherapy for children who have experienced trauma. Psychotherapists assisting in the development of this model are experimenting with the use of nonsuspended sensory integration equipment, such as large crash cushions, small air pillows, weighted blankets, tunnels, tents, body socks, sensory shakers, Bosu balls, physioballs, balance discs, and spinning boards, to create a playful and regulating atmosphere where the child can move into rhythmic play, begin to be more organized, and become self-reflective. The intent is not to provide sensory integration intervention, as this is the domain of trained occupational therapists and physical therapists, but to work on establishing coregulation to enhance the

goals of psychotherapy and use some of the process elements of the sensory integration model, such as collaboration on activity choice and establishing the "just-right" challenge.

I also have experimented with Deborah Rozelle, PsyD, in providing some joint psychotherapy and sensory integration-based occupational therapy sessions within a sensory integration-based occupational therapy clinic and found that the joint approach can be very helpful to the child and family who typically would see professionals in separate venues. Although each child may have many symptoms and conditions, every child has one nervous system. A child with a poorly integrated neurological system will not have as many resources for developing resiliency as a child who has a well-integrated nervous system. How the problems are represented and play out in functional difficulties depends on the interplay of all systems. Continued experimentation with combining therapies to create enhanced healing of the child and the family likely will yield new collaborative models that are richly rewarding for families and clinicians alike.

Final Thoughts

It is very important that occupational therapists working in the area of trauma and attachment disorders be attentive to their own self-care, as this work can bring up one's own unresolved past traumas and attachment issues. Becoming involved in individual psychotherapy or seeking professional mentoring or consultation often is advisable for occupational therapists because of the pain involved as layers of secrecy, shame, and isolation are revealed in each case. In this work, we encounter profound loss experienced by the children who have been traumatized. It is a highly courageous act to open to the pain and vulnerability that comes with holding the trauma of another person as well as to reflect on personal childhood pain that may emerge. As demanding as this task can be, it also stimulates professional and personal growth in emotional, cognitive, and spiritual arenas that can enrich our lives and enhance our ability to provide effective services to our clients. ■

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For More Information

For information on a collaborative attachment program developed by Sandy Glovak, OTR/L, and psychotherapists, visit www.attachmentcoalition.org.

For information on inpatient psychiatric sensory modulation strategies developed by Tina Champagne, MEd, OTR/L, visit www.OT-Innovations.com.

To inquire about upcoming courses on combining trauma, attachment, and sensory integration principles, visit www.thespiral-foundation.org.

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