

# **TRAUMA AND THE ROLE OF THE SCHOOL-BASED OCCUPATIONAL THERAPIST**

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## Abstract:

Recent research has shown that experiencing trauma in childhood may have a significant effect on school performance, particularly in the occupational performance areas of education, social participation, and play. This article highlights how occupational therapists working in the public schools can play a unique supportive role for these children through individualized programming that includes: consulting and collaborating with a multidisciplinary school team; analyzing environments, tasks, and routines with a trauma-informed sensory-based approach; and providing direct occupational therapy. Designed with the input of the student, this multifaceted plan helps facilitate regulation and participation in school for the child who has experienced trauma.

Keywords: Occupational therapy, trauma, school, sensory, regulation

According to the National Survey of Children's Health, close to 35 million children in the United States have experienced one or more types of childhood trauma (Child and Adolescent Health Measurement Initiative, 2013). Childhood trauma includes a broad range of experiences such as a loss of a consistent caregiver, neglect, different forms of abuse and maltreatment, and traumatic loss (van der Kolk, 2005; Koomar, 2009; Sar, 2011). The severity of the response can depend on the type of trauma, the child's capacity to cope, resources available, and surrounding circumstances and social context (Cole, Eisner, Gregory, & Ristuccia, 2013). When looking forward to adulthood, the Adverse Childhood Experiences (ACE) study found that those exposed to trauma in childhood were more likely to engage in high-risk behaviors and experience significant health issues (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, & Marks, 1998). The purpose of this article is to discuss the unique role that school-based occupational therapists have in supporting children who have experienced trauma.

While a range of complex symptoms and impairment levels exist, when assessing how the role of a student is affected by childhood trauma, the research suggests that possible reactions cluster around certain occupational performance areas such as social participation and play. Children who have been exposed to trauma often experience difficulty interacting with their peers in meaningful ways and participating in regular school activities (Munoz, 2011; Cahill & Pagano, 2015). Social skill deficits (Shonk & Cicchetti, 2001) could be due to physiological changes as a result of the trauma, occurring in their underlying brain development (Wilkinson, 2016). Research now also points to more widely occurring limitations in play skills in this population (Kjorstad, O'hare, Soseman, Spellman & Thomas, 2005; Arvidson, Kinniburgh, Howard, Spinazzola, Strothers, Evans, & Blaustein, 2011), which may affect their participation during recess and unstructured times in the classroom.

Accessing their education is another affected occupational performance area for children who have experienced trauma. They have often been found to demonstrate impaired intellectual capacity, poor executive function, distractibility (Deprince, Weinzierl & Combs, 2009), and overall lower academic performance (Goodman, Miller, & West-Olatunji, 2012). These problems in cognitive function impact the child's ability to successfully access the school curriculum and academic demands of a classroom. Regulation of emotion and behavior appear to be the most severely affected by trauma under the education performance area (Warner, Koomar, Lary, & Cook, 2013). As a result of the trauma, a child may demonstrate poor emotional self-regulation (Streeck-Fischer & van der Kolk, 2000), more signs of anger and emotional volatility, non-compliance, aggressive behavior (Oehlberg, 2008; Wilkinson, 2016), and sensory sensitivities (Streeck-Fisher and van der Kolk, 2000; McInerney & McKlindon, 2014). Research on brain development has suggested some reasons for these difficulties. Streeck-Fisher and van der Kolk (2000) discuss "trauma related hyperarousal", that is, children who have experienced trauma are often operating in an overaroused state. Van der Kolk (1994) explains that the stress response from the hypothalamic pituitary adrenal axis (HPA) is overstimulated and prevents appropriate arousal regulation through the nervous system. If a child is in a state of hyperarousal, their prefrontal cortex is less effective in guiding executive function (Arnsten, Raskind, Taylor, & Connor, 2015). This stress response not only affects the function of the prefrontal cortex, but also strengthens the emotional responses from the amygdala (Arnsten et al., 2015). Research has additionally begun to demonstrate connections between post-traumatic stress symptoms and sensory sensitivity (Engel-Yeger, Palgy-Levin & Lev-Wiesel, 2013; Koomar, 2009). Based on her clinical observations, Koomar (2009) has reported that this hypersensitivity in children who have experienced trauma is most often in response to sounds, touch, or movement.

Trauma in childhood is a pervasive issue. It is fair to assume that most school-based therapists are in school districts that have children who have experienced trauma, particularly those therapists that work with an at-risk population. Having a full understanding of the impact of trauma on a child's school performance is essential for those working in the schools to help facilitate the development of skills that are needed to prosper in a learning environment (Day, Somers, Baroni, West, Sanders, & Peterson, 2015). Resources are now available through

organizations such as the Massachusetts Advocates for Children (Cole, Eisner, Gregory, & Ristuccia, 2013) and the National Child Traumatic Stress Network (2008) about how to help traumatized children learn. Frameworks have been proposed such as the ARC (Attachment, Self-Regulation, and Competency) for treating complex trauma (Arvidson, et al., 2011). Mental health professionals have also developed evidenced-informed models such as cognitive behavioral therapy approaches that have started to be adapted for use in schools (McInerney & McKlindon, 2014). These resources can help the therapist to become more trauma informed, that is, to acquire a better understanding of the impact of trauma and apply it to the plan of care for the child. However, the responsibilities of each discipline in programming for this population of children in public schools are still not clearly defined.

An occupational therapist's role in the public school is to support the occupation of the student, which includes their education, social interactions, and play. All of these areas have been identified as affected by trauma. Due to their unique training and focus on function, occupational therapists are in an ideal position to help children in school who have experienced maltreatment (Whiting, 2002). Occupational therapists can analyze tasks and environments in order to identify participation barriers (Laverdure, 2011; Cahill & Pagano, 2015). Occupational therapists also offer extensive knowledge related to sensory, motor, and arousal regulation (Warner et al., 2013). However, children with psychosocial needs are often under-served by school-based occupational therapists, as compared to children with physical challenges (Chan, Dennis, Kim, & Jankowski, 2017; Hoffman, Fickes, & Nielsen, 2014). The American Occupational Therapy Association has attempted to clarify and promote the roles that occupational therapists can play with this population by recently publishing the *School Mental Health Toolkit* (Petrenchik & Weiss, 2015). This document refers to the importance of occupational therapists working in collaboration with the classroom teacher to design an environment that promotes learning for children who have experienced trauma. It also suggests that occupational therapists contribute to trauma-informed care by providing sensorimotor arousal regulation intervention. By following the guidelines of trauma-informed care, the occupational therapist is able to help school staff focus on the child's strengths, as well as build resilience and a sense of safety and control (Hopper, Bassuk, & Olivet, 2010).

More specifically, an occupational therapist who has received training in sensory processing and trauma can help intervene and guide programming to support and empower the child's self-regulation. Sensory-based approaches have been suggested as one potentially helpful way to assist someone who has emotion regulation challenges. The benefit of integrating sensory and trauma-informed interventions has been highlighted across all phases of trauma treatment (LeBel & Champagne, 2010; LeBel, Champagne, Stromberg & Coyle, 2010). Some research indicates that changes to the environment, as well as using sensory-based intervention, can help individuals with emotional regulation challenges (Sutton, Wilson, Van Kessel, & Vanderpyl, 2013; Scanlan & Novak, 2015; Warner, et al., 2013). When the prefrontal cortex is not functioning optimally to help manage emotional responses, working with the sensory motor systems of arousal regulation and body-based interventions may help a child to become grounded and engaged again,

in a more calm and relaxed state (Warner et al., 2013; Van der Kolk, 2015).

Van der Kolk (2015) has proposed that just being aware of how one's body feels helps to support emotional regulation. The sensory system allows the individual to develop body awareness and understand how his/her physical being relates to the surroundings (Ayres, 1998). A study in which the intervention included both sensory and cognitive/behavioral components showed a reduction in trauma symptoms, depression, and externalizing behaviors in traumatized youth (Raider, Steele, Delillo-Storey, Jacobs, & Kuban, 2008). Another study found similar results with better scores in self-perception and affect regulation, when sensory integration treatment was combined with psychotherapy, compared to psychotherapy alone in the same population (Kaiser, Gillette, & Spinazzola, 2010). Overall, a sensory approach can support a person's self-organization, help them to reduce the frequency of crises (Champagne & Stromberg, 2004), and learn about modulating their own arousal levels (Arvidson, et al., 2011).

Occupational therapists generally offer services for students in a school setting ranging from prevention and promotion to intervention. The occupational therapist should first observe the student who has been exposed to trauma to note if there are limitations to their participation in school. The next step is a thorough evaluation of the student, assessing underlying factors such as challenges with sensory processing that could be impactful, noting potential triggers from the trauma, signs of dysregulation, and areas of strength. Participation based goals can then be determined. When designing programming, it is imperative to individualize each plan to the student's particular needs and strengths. Consideration should also be given to the age of the student, as opportunities for direct service delivery are often limited at the upper grades. Heightened focus on the child's input across all components of programming, along with the necessity of working as a collaborative team, guide this trauma-informed approach.

There are specific components of individualized support that occupational therapists are equipped to provide in the public school for students who have experienced trauma: consulting and collaborating with a multidisciplinary school team; analyzing environments, tasks, and routines with a trauma-informed sensory-based approach; and providing direct occupational therapy. Research encourages the use of a multifaceted approach to programming for children when focused on participation (Reynolds, Glennon, Ausderau, Bendixen, Kuhaneck, Pfeiffer, & Bodison, 2017). By designing a trauma-informed school team that is knowledgeable in the use of sensory supports, providing a learning environment that facilitates participation and regulation, and direct occupational therapy, the school-based occupational therapist is able to contribute positive, predictable support to the child who has experienced trauma.

#### CONSULTATION AND COLLABORATION WITH MULTIDISCIPLINARY SCHOOL

**TEAM:** Team collaboration is of the utmost importance when building programming for students who have been exposed to trauma. Regularly scheduled consultation time with all staff on the student's school-based team allows continuation of programming and discussion in order to design a learning environment in which the student feels supported and engaged. In order for collaboration to be effective, all contributing members of the student's team need to be committed

(Christner, 2015). Ideally, key team members would include the student's teacher, school psychologist, behavior analyst, and the occupational therapist. Each contributes an essential and valuable support to the child's comprehensive programming. The main point person for the student to connect with and depend upon is the classroom teacher. He provides information to the team regarding current performance and pertinent updates gathered from the child's caregiver. The school psychologist helps to promote socio-emotional development in his or her work with the student and suggests cognitive strategies for the student to bring back to the classroom. The behavior analyst designs individualized positive behavior support systems and helps staff to respond appropriately to challenging behavior. As a part of this collaborative team approach, the occupational therapist educates all team members involved about the signs of trauma, its impact, and the effects of toxic stress on the body (Koomar, 2009). Occupational therapists assess cognitive, social, emotional, and sensory factors in order to recommend modifications to increase participation (Petrenchik & Weiss, 2015).

A trauma-informed classroom and school team can help students who have experienced trauma become more engaged in their education (Wong, Rosemond, Stein, Langley, Kataoka, & Nadeem, 2007). Programming should include specific efforts to increase protective factors and provide positive experiences for the students (Petrenchik & Weiss, 2015). Without this information, those working with the student may not connect problem behaviors to trauma (Tishelman, Haney, O'Brien & Blaustein, 2010; Richardson, Coryn, Henry, Black-Pond, & Unrau, 2012). In a non-informed situation, when a disciplinary response occurs, it is the opposite of the promotion of positive behavior management systems that the student requires (Petrenchik & Weiss, 2015). When the team understands why the child is dysregulated, they are able to adapt to provide a non-reactive, predictable response in a relationship-based interaction. Teachers would also be more alert to sudden changes in behavior like withdrawal, and could respond with questioning as opposed to dismissal. Power struggles may be avoided when a student is given choices about their participation. In addition, those working with the student can explore and use the child's strengths to develop his or her interest and engagement (McInerney & McKlindon, 2014).

**ANALYZING ENVIRONMENTS, TASKS, AND ROUTINES:** When the occupational therapist is able to work with the school team to create a safe and supportive environment that is trauma-sensitive, students who have and have not experienced trauma can all benefit (Tishelman et al., 2010). Ideally, to promote the student's sense of efficacy, the student who has experienced trauma is involved in the design and planning (Hopper et al., 2010). By applying principles of self-regulation and predictability, classrooms can provide an environment that promotes the child's trust and feeling of safety (Petrenchik & Weiss, 2015). A regular classroom may have certain environmental features, such as sudden changes in lighting and sound levels, that can provoke a student who has signs of hyperarousal (Carello & Butler, 2015; Cahill & Pagano, 2015). This can increase a child's vulnerability, leaving them feeling fearful or withdrawn (Tishelman et al., 2010). Occupational therapists can play a role in assessing the classroom and school environments to

determine if there are any factors contributing to the child's restricted participation and then suggest modifications.

The occupational therapist can collaborate with the classroom teacher to modify tasks within the classroom to support the occupational performance areas of education and social participation. For example, they are able to provide ideas for sensory-based strategies to promote sustained attention in the classroom and offer alternative tasks that encourage the student to participate in school routines. Occupational therapists can also suggest ideas for social activities within free play, lunch, or recess that provide opportunities for the individual student to be successful (Alexander & Kuhaneck, 2015). In addition, the occupational therapist may explore appropriate extracurricular activities and serve as a resource in the classroom to model regulation management strategies during instruction (Petrenchik & Weiss 2015; Arvidson, et al., 2011; Cahill & Pagano, 2015).

Another way that the occupational therapist can contribute is to consult with the team about developing a calming corner with sensory supports in the classroom (Koomar, 2009). While particular items may be included at the request of the student who has experienced trauma, all students would be welcome to visit this space when they are in need of calming down or have identified a need for an arousal change (Gardner, Dong-Olson, Castronovo, Hess & Lawless, 2012; Sutton et al., 2013; Arvidson, et al., 2011). Some clinical reports suggest that allowing access to this type of space can decrease the level of distress for those who have psychosocial challenges (Champagne & Sayer, 2005). Koomar (2009) recommends experiences such as sitting in a beanbag chair and listening to calming music through headphones to help the child bring their arousal level down to a place where they are available to learn. Other suggestions include stuffed animals, a body sock, a weighted blanket, and aromatherapy. If this calming space cannot be achieved in every classroom, a common area in the school that serves as a sensory corner can be developed.

Predictable routines and activities have been recognized as essential pieces to help a child who has experienced trauma reestablish a sense of safety as well as empowerment (Arvidson, et al., 2011; Petrenchik & Weiss, 2015). A child's ability to function in their school setting is dependent on their state of regulation. When children are young, modulation skills are often taught through movement or sensory experiences, so that they can become more connected to their bodies (Arvidson, et al., 2011). Use of a sensory diet has been proposed as another body-based intervention for children who have experienced trauma (Wilbarger, 1995; LeBel, et al., 2010; Champagne and Stromberg 2004; Warner et al., 2013). A sensory diet is a schedule of organizing sensory activities presented at regular intervals during the day. It may include proprioceptive, tactile, auditory, olfactory, and vestibular components. This can be completed in the child's classroom and made part of his daily educational routine. Practice suggests to use these strategies to help the student achieve a calm, alert state or in preparation for a known challenging part of the student's day. These soothing stimuli also allow the student to feel more grounded in his own body, regulated, and organized (Warner et al., 2013; Sutton et al., 2013; Champagne & Stromberg, 2004).

In order to design an individualized program, the activities should be chosen through a collaborative process between the student and an occupational therapist knowledgeable in the theory of sensory processing and integration. The student should be asked to identify his or her response to a variety of different stimuli and to rate whether they had an alerting or a grounding effect on him (Champagne, 2011). It is important for the clinician designing the sensory diet with the child to take into account the sensations that could elicit a negative response due to associated memory (Koomar, 2009; Hopper et al., 2010) as well as offer a variety of stimuli to maximize effectiveness (Champagne & Stromberg, 2004). Therefore, in theory, a sensory diet can help a child to self-regulate and to feel safe. When the child needs a change in the routine or selection of activities, the occupational therapist can help them to find the appropriate regulation tools that they are seeking (Warner et al., 2013). There is a need for frequent monitoring and assessment of effectiveness of the strategies by the occupational therapist, which can be aided by the use of a data collection system. Over time, the goal would be for the child to show an increased ability to independently choose and implement a calming sensory strategy when experiencing a need for an arousal change. The hope would be for the child's behavior to move from acting out when dysregulated to advocating for himself using proactive strategies across his day and across teachers, thus participating more effectively in his education.

**DIRECT INTERVENTION:** Trauma-informed occupational therapy focuses on just right challenges in a playful, engaging, sensory-rich environment (Petrenchik & Weiss, 2015; LeBel & Champagne, 2010; Warner et al., 2013). Just right challenges are experiences that are not too difficult for the child's skill set, but just beyond their current performance level. This careful matching decreases frustration and increases opportunities for growth. The therapist should have advanced training in sensory processing and trauma. Taking time to build a relationship with the student is instrumental to the success of the therapy. Ideally, a therapy room that offers the use of equipment typically used for sensory integration therapy can be used as a setting to promote self-regulation for students with trauma. The room may include items such as suspended and non-suspended equipment, crash pads, a ball pit, weighted toys, adapted lighting, and a trampoline. However, therapy can also easily be implemented in a variety of school environments such as the gym, resource room, or playground. For example, therapists can utilize proprioceptive, vestibular, and tactile modalities found on the playground to have the student identify grounding input that they find organizing.

By providing a student who has experienced trauma with direct intervention, the occupational therapist has the opportunity to promote mastery and problem solving skills (Petrenchik & Weiss, 2015), occupational enrichment to promote engagement (Munoz, 2011; Cahill & Pagano, 2015), and development of a positive self-image (Arvidson, et al., 2011). The focus of the occupational therapy sessions is on creating opportunities for the child affected by trauma to make choices, allowing them a sense of control, in order to empower them to find approaches to modify their own arousal level (Petrenchik & Weiss, 2015). In addition, these therapy sessions can help the student improve executive function by practicing making plans and

analyzing their choices (Petrenchik & Weiss, 2015).

Activities within the sessions, which guide self-regulation and sensory modulation, can help promote the student's self-efficacy (Petrenchik & Weiss, 2015). As part of therapy, the child rehearses strategies to raise and lower his arousal levels with his occupational therapist (Warner et al., 2013). Programs such as the Alert Program (Williams & Shellenberger, 1994) have been found to be particularly beneficial for children with social, emotional, and behavioral difficulties (Mac Cobb, Fitzgerald, Lanigan- O'Keeffe, Irwin & Mellerick, 2014). The Alert Program was designed to help students learn to monitor, maintain, and change their alertness level so that it is appropriate to a situation or task (Williams & Shellenberger, 1994). By putting together a sensory approach with cognitive strategies, children are able to become more self-aware and make adjustments when needed to increase participation (Petrenchik & Weiss, 2015).

It has been proposed that play can also help assist the self-regulation process (Savina, 2014). Van der Kolk references the importance of fun in the development of skill and learning for this population (2005). Occupational therapists use a play-based therapeutic approach in their intervention (Cooper, 2000). Through play and social interaction in the session, the student can become better attuned to what they like and what motivates them (Petrenchik & Weiss, 2015). As they develop their play skills in therapy, students may be encouraged to play more with peers at school outside of the therapy session. A peer can even be brought into the therapy session to increase the child's exposure to successful interactions and experiences. Many of these children are still very dependent on another person for co-regulation (Arvidson et al., 2011). Co-regulation refers to a mutual adjustment of behavior that occurs between the child and the other person. The use of sensorimotor play within the therapy session can facilitate this co-regulation (Koomar, 2009). The goal is for the child to generalize these increased play skills and capacity for regulated social interactions to unstructured situations with their peers at school.

Trauma is increasingly prevalent among children in our public schools. It is important for the occupational therapist to collaborate with professionals from other disciplines to develop comprehensive integrated programming and interventions for these students. Using a person-centered, strengths-based approach, the occupational therapist can provide multifaceted programming to help increase the occupational performance across the school environment of the child who has experienced trauma. These programs should be individualized and based on assessment data, as a child's symptoms related to trauma can vary. Since there is limited research in this area, it is imperative that occupational therapists utilize a data-driven decision model when designing their programming components. Developing practice-based evidence with assessment tools such as pre- and post-tests, goal ratings, and qualitative logs help the therapist to measure outcomes of intervention and monitor progress and effectiveness. Progress toward the goal of reducing the impact of trauma may be reflected in participation-focused gains in education, social interaction, and play. Ideally, the student would be able to move into initiating and expanding their self-regulation strategies, as a reflection of his increased self-awareness and sense of agency. With an improvement in resilience and engagement in the occupation of being a student, the child can feel empowered to achieve success. Under the facilitation and leadership of the occupational

therapist, this type of programming in the public schools could provide much needed support for children who have experienced trauma.

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Alexander, K. C., & Kuhaneck, H. C. (2015). Successful Participation at School: Strategies for Students With Autism Spectrum Disorder. Retrieved from the AOTA website: <https://www.aota.org/~media/Corporate/Files/Practice/Children/ASD-Tips-for-Educators-Successful-Participation-at-School.pdf>

Arnsten, A. F., Raskind, M. A., Taylor, F. B., & Connor, D. F. (2015). The effects of stress exposure on prefrontal cortex: Translating basic research into successful treatments for post-traumatic stress disorder. *Neurobiology of Stress*, 1, 89-99.

Arvidson, J., Kinniburgh, K., Howard, K., Spinazzola, J., Strothers, H., Evans, M., ... & Blaustein, M. E. (2011). Treatment of complex trauma in young children: Developmental and cultural considerations in application of the ARC intervention model. *Journal of Child & Adolescent Trauma*, 4(1), 34-51.

Ayres, A.J. (1998). *Sensory Integration and the child*. Los Angeles, CA: Western Psychological Services.

Cahill, S. M., & Pagano, J. L. (2015). Reducing restraint and seclusion: The benefit and role of occupational therapy. AOTA School Mental Health Toolkit. Bethesda, Maryland: AOTA Press.

Carello, J., & Butler, L. D. (2015). Practicing what we teach: Trauma-informed educational practice. *Journal of Teaching in Social Work*, 35(3), 262-278.

Champagne, T. (2011). *Sensory modulation & environment: Essential elements of occupation* (3<sup>rd</sup> Ed. Rev.). Australia: Pearson.

Champagne, T., & Sayer, E. (2005). The effects of the use of the sensory room in psychiatry. Retrieved from the OTInnovations.com website: [http://www.ot-innovations.com/images/stories/PDF\\_Files/qi\\_study\\_sensory\\_room.pdf](http://www.ot-innovations.com/images/stories/PDF_Files/qi_study_sensory_room.pdf).

Champagne, T., & Stromberg, N. (2004). Sensory approaches in inpatient psychiatric settings: innovative alternatives to seclusion & restraint. *Journal of Psychosocial Nursing and Mental Health Services*, 42(9), 34-44.

Chan, C., Dennis, D., Kim, S. J., & Jankowski, J. (2017). An Integrative Review of School- Based Mental Health Interventions for Elementary Students: Implications for Occupational Therapy. *Occupational Therapy in Mental Health*, 33(1), 81-101.

Child and Adolescent Health Measurement Initiative (2013). *Overview of Adverse Child and Family Experiences among US Children*. Data Resource Center, supported by Cooperative Agreement 1-U59-MC06980-01 from the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB). Available at [www.childhealthdata.org](http://www.childhealthdata.org).

Christner, A. (2015). Promoting the role of occupational therapy in school-based collaboration: Outcome project. *Journal of Occupational Therapy, Schools, & Early Intervention*, 8(2), 136-148.

Cole, S. F., Eisner, A., Gregory, M., & Ristuccia, J. (2013). Helping traumatized children learn: Creating and advocating for trauma-sensitive schools. Massachusetts Advocates for Children. Boston, Massachusetts.

Cooper, R. J. (2000). The impact of child abuse on children's play: A conceptual model. *Occupational Therapy International*, 7(4), 259-276.

Day, A. G., Somers, C. L., Baroni, B. A., West, S. D., Sanders, L., & Peterson, C. D. (2015). Evaluation of a trauma-informed school intervention with girls in a residential facility school: Student perceptions of school environment. *Journal of Aggression, Maltreatment & Trauma*, 24(10), 1086-1105.

DePrince, A. P., Weinzierl, K. M., & Combs, M. D. (2009). Executive function performance and trauma exposure in a community sample of children. *Child Abuse & Neglect*, 33(6), 353-361.

Engel-Yeger, B., Palgy-Levin, D., & Lev-Wiesel, R. (2013). The sensory profile of people with post-traumatic stress symptoms. *Occupational Therapy in Mental Health*, 29(3), 266-278.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245-258.

Gardner, J., Dong-Olson, V., Castronovo, A., Hess, M., & Lawless, K. (2012). Using wellness recovery action play and sensory-based intervention: A case example. *Occupational Therapy in Healthcare*, 26 (2-3), 163-173.

Goodman, R. D., Miller, M. D., & West-Olatunji, C. A. (2012). Traumatic stress, socioeconomic status, and academic achievement among primary school students. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(3), 252.

Hoffman, K., Fickes, K., @ Nielsen, S. K. (2014). Motivating the Unmotivated Child: Using Psychosocial Intervention Methods in the School. *Journal of Occupational Therapy, Schools, & Early Intervention*, 7(3-4), 185-193.

Hopper, E. K., Bassuk, E. L., & Olivet, J. (2010). Shelter from the storm: Trauma-informed care in homelessness services settings. *The Open Health Services and Policy Journal*, 3(2), 80-100.

Kaiser, E. M., Gillette, C. S., & Spinazzola, J. (2010). A controlled pilot-outcome study of sensory integration (SI) in the treatment of complex adaptation to traumatic stress. *Journal of Aggression, Maltreatment & Trauma*, 19(7), 699-720.

Kjorstad, M., O'hare, S., Soseman, K., Spellman, C., & Thomas, P. (2005). The Effects of Post-Traumatic Stress Disorder on Children's Social Skills and Occupation of Play. *Occupational Therapy in Mental Health*, 21(1), 39-56.

Koomar, J. A. (2009). Trauma-and attachment-informed sensory integration assessment and intervention. *Sensory Integration Special Interest Section Quarterly*, 32(4), 1-4.

Laverdure, P. (2011). The Role of Occupational Self-Assessment in Client-Centered Practice in School-Based Settings. *Journal of Occupational Therapy, Schools, & Early Intervention*, 4(3-4), 197-203.

LeBel, J., Champagne, T., Stromberg, N., & Coyle, R. (2010, March). Integrating sensory and trauma-informed interventions: A Massachusetts state initiative, part 1. *Mental Health Special Interest Section Quarterly*, 33(1), 1-4.

LeBel, J., & Champagne, T. (2010, June). Integrating sensory and trauma-informed interventions: A Massachusetts state initiative, part 2. *Mental Health Special Interest Section Quarterly*, 33(2), 1-4.

Mac Cobb, S., Fitzgerald, B., Lanigan-O’Keeffe, C., Irwin, N., & Mellerick, N. (2014). Students with social, emotional, and behavioral difficulties: The Alert program trial in post-primary schools. *Journal of Occupational Therapy, Schools, & Early Intervention*, 7(2), 106-119.

McInerney, M., & McKlindon, A. (2014). Unlocking the door to learning: Trauma-informed classrooms & transformational schools. Education Law Center. Web. Unlocking the Door to Learning: Trauma–Informed <http://www.elc-pa.org/wp-content/uploads/2015/06/Trauma-Informed-in-Schools-Classrooms-FINAL-December2014-2.pdf>.

Munoz, J. (2011). Mental health practice in forensic settings. In C. Brown & V. Stoffel Eds., *Occupational Therapy in Mental Health* (pp.526-545). Philadelphia, Pennsylvania: F.A. Davis

National Traumatic Stress Network. (2008). *Child trauma toolkit for educators*. Retrieved from <http://nctsn.org/resources/audiences/school-personnel/trauma-toolkit>

Oehlberg, B. (2008). Why schools need to be trauma informed. *Trauma and Loss: Research and Interventions*, 8(2), 1-4.

Petrenchik, T. & Weiss, D. (2015). School Mental Health Toolkit. Retrieved from at <http://www.aota.org/Practice/Children-Youth/Mental%20Health/School-Mental-Health.aspx>

Raider, M. C., Steele, W., Delillo-Storey, M., Jacobs, J., & Kuban, C. (2008). Structured sensory therapy (SITCAP-ART) for traumatized adjudicated adolescents in residential treatment. *Residential Treatment for Children & Youth*, 25(2), 167-185.

Richardson, M. M., Coryn, C. L., Henry, J., Black-Pond, C., & Unrau, Y. (2012). Development and evaluation of the Trauma-Informed System Change Instrument: Factorial validity and implications for use. *Child and Adolescent Social Work Journal*, 29(3), 167-184.

Reynolds, S., Glennon, T. J., Ausderau, K., Bendixen, R. M., Kuhaneck, H. M., Pfeiffer, B., ... & Bodison, S. C. (2017). Using a Multifaceted Approach to Working With Children Who Have Differences in Sensory Processing and Integration. *American Journal of Occupational Therapy*, 71(2), 7102360010p1-7102360010p10.

Sar, V. (2011). Developmental trauma, complex PTSD, and the current proposal of DSM-5. *European Journal of Psychotraumatology*, 2(1), 5622.

Savina, E. (2014). Does play promote self-regulation in children?. *Early Child Development and Care*, 184(11), 1692-1705.

Scanlan, J. N., & Novak, T. (2015). Sensory approaches in mental health: A scoping review. *Australian Occupational Therapy Journal*, 62(5), 277-285.

Shonk, S. M., & Cicchetti, D. (2001). Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Developmental Psychology*, 37(1), 3.

Streeck-Fischer, A., & Kolk, B. A. (2000). Down will come baby, cradle and all: Diagnostic and therapeutic implications of chronic trauma on child development. *Australian and New Zealand Journal of Psychiatry*, 34(6), 903-918.

Sutton, D., Wilson, M., Van Kessel, K., & Vanderpyl, J. (2013). Optimizing arousal to manage aggression: A pilot study of sensory modulation. *International Journal of Mental Health Nursing*, 22, 500-511.

Tishelman, A. C., Haney, P., O'Brien, J. G., & Blaustein, M. E. (2010). A framework for school-based psychological evaluations: utilizing a 'trauma lens'. *Journal of Child & Adolescent Trauma*, 3(4), 279-302.

Van der Kolk, B. A. (1994). The body keeps the score: Memory and the evolving psychobiology of posttraumatic stress. *Harvard Review of Psychiatry*, 1(5), 253-265.

Van der Kolk, B. A. (2005). Developmental trauma disorder. *Psychiatric Annals*, 35(5), 401-408.

Van der Kolk, B. A. (2015). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Penguin Books.

Warner, E., Koomar, J., Lary, B., & Cook, A. (2013). Can the body change the score? Application of sensory modulation principles in the treatment of traumatized adolescents in residential settings. *Journal of Family Violence*, 28(7), 729-738.

Wilbarger, P. (1995). The sensory diet: activity programs based upon sensory processing theory. *Sensory Integration Special Interest Section Quarterly*, 18(2), 1-4.

Wilkinson, I. G. (2016). Why Some Children Come to School with “Baggage”: The Effects of Trauma Due to Poverty, Attachment Disruption and Disconnection on Social Skills and Relationships. *Canadian Journal of Family and Youth*, 8(1), 173-203.

Williams, M. S., & Shellenberger, S. (1994). *How does your engine run? A leader's guide to the alert program for self-regulation*. Albuquerque: Therapy Works.

Whiting, C. C. (2002). School performance of children who have experienced maltreatment. *Physical & Occupational Therapy in Pediatrics*, 21(2-3), 81-89.

Wong, M., Rosemond, M. E., Stein, B. D., Langley, A. K., Kataoka, S. H., & Nadeem, E. (2007). School-based intervention for adolescents exposed to violence. *The Prevention Researcher*, 14(1), 17-21.